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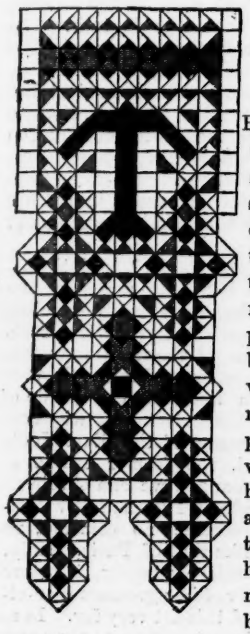


The Outlook of Labour in 1878.

THE year 1878 opens under circumstances of some depression and some gloom. It is a cynical philosophy that teaches that we should take pleasure in the misfortunes of other people. But it is the better, and not the worse, side of human nature that leads us to prize such blessings as we possess the more highly, the more we are convinced of their transitory nature. And how easily misfortune may come is best brought home to our minds by the spectacle of the troubles of our neighbours. War amongst our Continental neighbours, and famine among our Indian fellow-subjects, have made 1877 a black and memorable year. Rain has now fallen copiously in India. The spring crop of 1878 is, in all expectation, safe. The worst menace of famine, that of the lapse of day after day without signs of the earth yielding its fruit, is past. But Indian finance is telling the story of 1877; and in how many families over the wide extent of seven degrees of longitude and fourteen degrees of latitude will not gaps and other marks of distress long recall the memory of the great drought?

Winter has frozen the hot stream of human blood, which has flowed at an average rate of some forty gallons an hour for 200 days during the past year. But the latest news from Russia tells of another conscription, of another half-million of men, in round numbers, whom ambition is about to divert from reproductive industry to the evil industry of destruction. The value of each man who falls in battle is reduced from that of a steady producer, at the rate of from 30*l.* per annum upwards, to that of the weight of the body as manure, to give it the very highest value. Into the terrible economics of war we are not about to enter. That which more concerns us in England is to inquire how far the arts of domestic war are being inflicted on our own country, by the hands of her own children. Relieved from the conscription which is crushing Russia, which has impoverished Germany, and which is so serious a family trial in France, how does the English peasant show his gratitude for the exemption?

Men who, like ourselves, feel deeply on that subject, are beginning to speak out. Sir Edmund Beckett, to whose letters to the daily press we have before now called the attention of our readers, has come forward with some very plain truths, couched in equally plain language. It is more easy to carp at what Sir Edmund says than to avoid the force of his arguments. Mr. Bevan, who has for some time been known as a writer on industrial subjects, has contributed a table in a form entirely new to statistics. It is a table of a very instructive kind. It gives the unpleasant fact, that during the year 1877 there has been a strike among the working classes every other day. Indeed, reckoning Sundays, there has been a strike every fifteen hours, if we take the working day at ten hours long. The total number of strikes during the year, Mr. Bevan says, has been 191, involving some fourteen sections of operatives. The uneasy state of labour appears, from this black list, to have been general. In the great mining and metallurgic industries there have been forty-four strikes, counting those of fifteen different trades, or occupations. In the trades connected with building there have been ninety-two strikes, including eighteen different trades. Textile workers have contributed eighteen disturbances to the course of labour; shipbuilders, eight; persons engaged in clothing others, also eight; workers in clay, glass, &c., seven; engineers and drivers, milesmen and roadmen, and "platers," among engineers, have each struck once. Nothing has occurred, indeed, of a magnitude comparable to that of the great railway shock of the United States. But the fact that any body of men are, or consider themselves to be, equal to the task of suspending the entire internal communication of the country, if they are dissatisfied, is one of the gravest that has become prominent during the present century. It is an inconvenience attaching to the railway system of which Stephenson could never have dreamed. It is worthy of note here that the persons employed in gasworks do not appear, in the past year, to have resorted to a measure as menacing to the public safety of our cities as a railway strike can be to that of our communication.

As to all these strikes, there is one common characteristic. Sir E. Beckett has put it in a very simple mathematical form. But even so simple a bit of algebra as the use of the expression, *n* weeks, for a certain number of weeks, may cause those who are not familiar with algebra to turn aside, and allow a very pointed argument to glance over their heads. The point is this. For every week lost in a strike a certain number of weeks' work, at the higher wages struck for, is required, in order to avoid positive loss to the workmen. Thus, in the case of a strike of six months' duration, for an advance of ten per cent. in wages, five years' labour at the higher rate will be required in order to make up the positive loss incurred in the strike. No one can suppose that wages can be settled so far in advance by the result of a single contention. Thus, it is tolerably clear that a prolonged strike, even if successful, or rapidly repeated strikes, even if successful, involve certain loss to the parties striking. It is of cardinal importance that the plain arithmetic of this fact should be understood by the workman. Triumph, it is almost certain, will be too dearly bought. Failure means pure, unmitigated, self-inflicted loss.

The main outcome of the strikes of 1877 has been failure on the part of the workmen. Thus, the colliers at Saundersfoot, South Wales, were out seven months for an increase of wages, and finally returned to work at the old terms. This was a pure and unmitigated loss of the income to the men, and of the fruit of their toil, and interest on capital to the masters, for seven-twelfths of the year. At Dronfield, seven and a half months; at Dodsworth, seven months; at Fife and Clackmannan, three months, were wasted with the same result. The joiners at Wolverhampton were out for six months; those at Manchester for eight months. The shipwrights on the Clyde stood still for nearly six months, and then submitted to arbitration, which went against them. The nut and bolt makers of Darlaston were idle for twenty-six weeks, and then returned to work at lower prices than those against which they struck. The London masons have succeeded in forcing the employers to have recourse to German and American labour. Of both of these there seems to be good reason to expect a too ample supply; while the immense reservoir of labour available from China and Japan, which has already produced so much effect in America, has as yet fortunately been almost untapped in this country. Almost, not altogether; Japanese compositors are now at work for English printers, though there has been but one compositors' strike and one printers' strike in 1877; and we hear, while writing, of the execution of the costly fittings of passenger steamers, not only by Japanese carpenters, but actually in Japan.

It is the contention of the organisers of strikes that their proceedings are regulated by the absolute principles of political economy. We have frequently urged the fact, in the columns of the *Builder*, that economic principles are not the only factors in political movement. Certain economic laws, no doubt, exist, and to a great extent have been traced to their source. But the operation of these laws is controlled to a very great extent by other considerations. Thus a wise and sound economy would be effected if the English peasantry would eat oatmeal, barley bread, or rye bread, instead of wheaten bread. The economy would come palpably home to every family. Health would, there is reason to conclude, be improved by the change. But the Englishman likes wheaten bread, and, worse than that, likes it new from the oven. He is not to be induced by motives of economy to make a change. In a few weeks he would not only find the pecuniary advantage of that change, but would take quite as much pleasure in the use of the substituted as he ever did in that of the original, food. But, simply, he will not try. With a fact like this staring us in the face, it is idle to talk of the controlling power of economical considerations.

It is just the same with reference to strikes. Thirty shillings a week is a moderate rate of wages. Many a craftsman can earn considerably more. The man who is in the receipt of that wage thinks he should prefer 33s.; it is only 10 per cent. more. The immense profit of the capitalist, he fancies, can readily afford that,—especially as it is only for one set of operatives out of ten. That is, only 1 per cent.—to the master—not 2½d. in the pound. Hold out! and that is sure to be yielded. So the men think. They are out for twenty-six weeks. Each loses, say, 39*l*. How much extra time, even if he got the 33s., must he work to make up for that serious loss? What does that loss come to when multiplied by the number of strikers? And on whom does it fall? It is true that the non-production does a double mischief. It curses him who does not work as well as him for whom he does not work. But no amount of inconvenience or loss suffered by the master interferes with the fact that the workman has fined himself 39*l*. Say he has had 18s. a week allowed him as strike-money by the union; that only means that out of the 39*l*. which he has lost, he has contrived to throw the burden of 23*l*. 8s. on his fellow-workmen. There is a sort of mutual assurance; but it is only the assurance that consists in a division of actual loss among a greater number of losers; and to replace this loss merely to make up for the money wasted by idleness, the workman will require steady work for five years at the higher rate of wages. Thus, if his strike succeeds, it has the sole effect of distributing over five years the earning of a sum of money which, without the strike, would have been earned in six months.

Not only, then, do those who endeavour to show that the workman is better without tools,—for that is the real meaning of labour without capital,—err in urging that the principles of political economy supersede every moral, social, or religious consideration, but they err also in their conception and application of the principles of political economy. Most especially do they err in the endeavour to enlist the whole labour-producing power of the United Kingdom in a mortal opposition to that policy which has given to the poor man the cheap loaf. The direct tendency of unionism is to destroy free trade. The two ideas are opposed, the two principles are mutually exclusive. Every trade, on the Union principle, is to be a close borough. The famous advice which that keen satirist, Dean Swift, gives to servants, is taken literally by the unionist,—meaning as we do, the man who endeavours to control the natural course of the labour market by menace, whether the menace be directed against the workman or against his employer. If your master has a thousand a year, the Dean says to the cook, remember that you have to spend at that rate. The same advice is given to the butler, the same to the coachman, and so on with each kind of expenditure. It is exactly the same with the attempt to isolate the interests of any trade. Now it is the coal-miner, now the ironworker, now the mason, who comes to the front of the battle. Suppose the first to succeed, and to raise his own wages ten per cent. We know, from definite experience, that the result of such a rise will be a far more than corresponding rise in the price of coal. Fifty per cent. will be nearer the mark. And how does that affect the course of every industry? Each man who augments his own wages by artificial means, augments, or at least tends to augment, in a far higher ratio, the cost of every article which those wages have to produce for him.

When protective laws encompassed the farmer with a barrier that he considered to be of vital service to himself, it must be remembered that it was not on the score of the farmer's welfare alone that those laws were supported. It was on the plea of national safety. At one time our navy was dependent on the home-growth of oak. Laws were consequently passed to protect the oak tree. In the same way it was long considered to be an axiom in politics that for a state to be safe it must be self-supporting. "What? Depend on the foreigners for food! How, then, in case of war? We shall be starved out at once." Such was long held to be an axiom of political wisdom. And it is only by the growth of the population to a number which it is entirely beyond the capacity of the area of the island to feed that this axiom has been overthrown. We could not grow the wheat we required, do what we would. Year by year we required more from abroad; and so it came to pass that we arrived, unexpectedly, at the truth that, by throwing down the barrier of the corn trade we could provide food for the people more certainly, as well as more cheaply, than in any other way.

It is the same in all occupations. The desire to keep a craft close is a very ancient one. At certain periods in national growth it may be a very useful one, just as the ferule of the schoolmaster is of use when applied to a boy, though it would only be an affront to a man. But it is impossible for a great and populous country to adopt a shuffling and contradictory policy in a matter of this kind. Trade must either be free or not. If our shops are to be open for Indian wheat and American flour, they must be open for all products of Indian and American labour. If these products can be best conveyed to, or manipulated on, our own soil, by the Indian or American workman, who shall say him nay? No one who is an advocate of free trade. That we should consume Japanese tea or American cheese, and say to the Japanese and to the American,—"Stop on our soil at your peril," is one of those anomalies that cannot be consistently defended. America has taught us that, disgusted as the native workman may be, native idleness will not hold its own against imported industry and thrift. It is in the nature of things that the same lesson will be taught the workman in this country, if he keeps up such an unnatural tension in the supply of native labour as to make the importation of foreign labour plainly lucrative. And the first step taken, the course will be frightfully rapid.

In one respect seasons of past prosperity have been, not only wasted, but turned to evil account. We have seen a great expansion of business, and a consequent increase in the remuneration of the workpeople. Trade has thriven, and the thrift has been such as to pay all concerned. The formation of trade unions, not as mutual benefit societies, but as labour-controlling associations, first assumed importance about the time that the prodigious stimulus to productive industry of all kinds which was given by the introduction of railways commenced. Thus trade has thriven as unions have become powerful. It is not unnatural for the unionist to say, "Trade has thriven because unions have become powerful." But no argument can be more childish. Mr. Bevan has pointed out that the improved condition of the workman has not been less in those occupations in which no unnatural constraint was put on the disposal of labour than in those in which the interference of the unions with the freedom of the individual workman has been most complete. He might go further. The unions, as far as the rate of wages is concerned, can only do one of two things,—force an open door, or produce a temporary effect, which soon involves a reaction. When trade is enlarging, and prices are rising, skill and industry on the part of the workman become more and more valuable. Labour of all kinds rises in price, but the rise is most to the benefit of the best workman. In this case the union does not raise the price, it is general prosperity that does so. All that the union can do, in times of advancing prosperity, is to handicap the best workman. It limits the number of bricks he shall lay, the number of hours he shall work; it forbids him to work in the mode most remunerative to himself. In times like these, it would be more to the advantage of the skilled and rapid workman to pay a certain definite portion of his weekly wages for the express purpose of aiding the clumsy and idle workman to do little and bad work, than it would be to support a union which limits the productive power of industry. In the first instance, the workman would suffer injustice, but to an extent that he could readily calculate. In the second case, not only does the workman suffer, but the country also. Less work is done, less wealth is earned; and British industry is weighted in its competition with foreign industry.

It is not as if we possessed a monopoly of production. When we glance round the world we can see but one thing left amongst all those in which we were accustomed to consider that we had, to a certain extent, a monopoly. It is against this very English characteristic that labour-controlling regulations are directed. Coal, ironstone, other metals, clay, stone, marble, all the raw materials of industry are found all over the world. New mines and sources of supply are daily discovered. The earth, with us, does not yield such a return to labour as it does in countries nearer the equator. The means of transport, in which first our insular position, and then our inland navigation, gave us at one time so great an advantage, are now more generally equalised on the surface of the globe. In some important cases they are far cheaper elsewhere than in England. Thus on two American railways, since they have been constructed at about one-third in cost of the English buildings, while the traffic is generally larger, it is possible to carry much cheaper. On the East India Railway the cost of transport is less than half the average cost in this country. It is not, then, to the physical qualities of our island that we can look with any certitude, in order to command a prime place among the producing nations of the world. Our old glory was this. The English workman, all things considered, was the prince of workmen. Steady, reliable, provident, skilful, strong, industrious, civil, and unwearied, he used, as a rule, to turn out more and better work than any other workman. Employers of labour, both at home and abroad, knew this. The men took a pride in it. The fact was the backbone of our prosperity. The great contention which the English statesman, or enlightened patriot, has to urge against any combination for the control of labour is, that its result, if it succeed, is the destruction of the mainstay of our national welfare, the emulous, self-respecting, distinctive excellence of the foremost workmen, and the influence that their example exerts over all the inferior members of their craft.

We can fix our eyes on no portion of the industrial world without becoming aware of the existence of those who are steadily bending their energies to rival us in the productive race. In England, the home of the iron industry, there is no factory to be compared to the German factory of Krupp. In England, the cradle of the railway system, there is no railway conducted with the economy of the East India Railway. In England, the former cradle of literature and its appliances, we can obtain no paper such as that made in France, in Switzerland, or even in America; no printing, no illustrated literature like that of Paris. Italy, in spite of her comparative poverty, is before us in the size and power of her greatest men-of-war. We might extend this list very far. In so doing, we should still have to return to the same consideration. We made, in most of these matters, a start. We might have maintained that start; and to have done so would have been to increase the distance at which we should have kept ahead. We have lost this start, in almost every case. The uncertainty of the tenure by which we hold our yet remaining prosperity is frightfully illustrated by the fact. The centres of our most important industries are being displaced. The districts of England which once commanded the market of the world, are now so little in advance of the foreigners that they are beggared by a slight advantage obtained by some other English district. Such is the case with the two master industries of coal and iron, the outcome of which, for 1876, amounted to 62½ millions sterling. A slight increase in facilities in one district produces distress in others. The Cleveland iron district is monopolising our iron trade. The Scotch pig-iron trade, once considered one of the surest of our industries, is being actually extinguished by it. Cleveland iron, in large quantities, is now exported to Scotland. Nor to Scotland alone. It is exported,—in the crude state of pig iron,—in large quantities to Germany; where it is manufactured and wrought, and whence, in not a few instances, it is returned to England, to the exclusion of home-manufactured articles. The working-man, the friends of the working-man, and those self-called friends who may prove his most fatal enemies, cannot too anxiously study the statistics of the iron trade.

It is impossible to read the accounts which come from every district of England without the gravest anxiety. It is worse than idle to lay, as a very energetic opponent of the steam engine and all its works attempts to lay,—all the blame on the masters. It would be equally idle to lay it all on the men. It would, perhaps, be less difficult to gibbet some of those individuals on whom the most serious responsibility really devolves. That is not our task. Our object is to speak home to every man who has fewer shillings in his pocket, this winter tide, than he has been accustomed to have, and to ask him to reflect what that means. Has he, or has he not, in the past year, taken a pride to do his best? If not, has he slackened his

hand at the counsel of some speculative adviser? Has he been wilfully idle, rather than work at the best prices offered. Has he supported those who were idle rather than work at the market rate? If so, what has it cost him? What has he gained? It is only by putting such questions as these to themselves in time that our working men are likely to avoid having, perforce, a long leisure to reflect on their former welfare, and bitterly to regret the folly that counselled them to try and better their condition by wasting their time, and limiting the amount of their productive labour.

ANCIENT ART IN CYPRUS.

ON Christmas-Day, 1865, the newly-appointed American Consul for Cyprus was landed at Larnaca, on the south-eastern part of the coast, in a manner the least official or impressive that could well be. The big shore-boat or lighter having grounded four or five yards from the shore, the representative of the Great Republic was carried on the shoulders of a native boatman to the shore, and thus made his undiplomatic entry into the town where he was to reside. The feminine half of the Consulship was less ready to bend to circumstances, and it was not until the boat was lightened of its luggage, and drawn up higher, that the lady from New York condescended to jump on shore, without any assistance from the native arm. This rough style of landing seems only to have been in keeping with the first impression produced when the steamer cast anchor a mile from the shore. "The town, from that distance, looked the very picture of desolation; no sign of life, no vegetation anywhere visible, except a few solitary palm-trees, with their long leaves drooping, as if in sign of mourning. I admit that my first thought was to remain on board, and not to land on such a forlorn-looking island." Such were General di Cesnola's first impressions of the island from which, ten years later, he was to write the account of the interesting and remarkable archæological discoveries which are described and illustrated in his beautiful volume * and which, as Mr. Layard observed, "add a new and very important chapter to the history of art and archæology."

Apart from the variety and interest of the objects discovered, which together make one of the richest treasures it has fallen to the lot of one explorer to find in one place, the special importance of the "new chapter" thus opened arises in the most natural manner from the peculiar situation of Cyprus. A large island in an angle of the Mediterranean, nearly equi-distant from the sources of Grecian, Assyrian, and Egyptian art, it became a kind of neutral ground on which these met, producing a local art, exhibiting characteristics borrowed from all these sources. In some cases the remains found by General Cesnola represented separate types of art, apparently founded on that of one or another of the countries just named, and grouped together in the remains of one temple, but obviously not contemporaneous in execution; as if one or another type had been most prominent for a time, as one or another respectively of the nations around had been uppermost in its influence and power on the island. But in addition to this collocation of various types, there is, as General Cesnola observes, and as he shows by some of the illustrations of the objects found, a typical "Cypriote art," which really is "a mixture of Greek, Egyptian, and Assyrian," the characteristics of which can be traced in one and the same production. There is, in fact, scarcely a better-defined instance to be found of the influence of geographical position on the formation of an artistic style than is furnished by some of these remains of the ancient art of Cyprus.

General Cesnola devotes his introductory chapter to a sketch of the history of Cyprus, showing the various dominations under which it has been, as influencing its art: and it may be interesting just to touch on the salient points of this history, before making a few remarks on the nature of his discoveries. The history, of course, commences in conjecture, but the name of one of the principal towns, *Citium* (the modern Larnaca) adds probability to the belief that the island was the *Chittim* of the Old Testament, and that its wealth in copper* would have attracted to it at an early period the great traders of the ancient world, the Phœnicians. One of the first of the references to Chittim in the Old Testament (Numbers xxiv. 24) alludes to it as a place of maritime renown,—"Ships shall come from the coast of Chittim, and shall afflict Asshur," &c. The country then would seem to have been originally one of commercial and even of warlike enterprise; it was perhaps, as General Cesnola suggests, due in great measure to the enervating influence of its climate that Cyprus came to be at an early period of known history a place of typical luxury and sensuousness, and that Paphos became the great centre of the worship of Aphrodite. Such a country becomes usually the prey of more energetic races, so that it is not surprising that Cyprus should have become merely a kind of advanced post in the Mediterranean for different nations of the mainland, as each became successively uppermost in influence or power. Thus, long before the Christian era, the island appears to have passed successively under the rule of Egypt, Assyria, and Persia, and subsequently under that of the Athenians, who (under Evagoras) long contested its possession with the Persians. After Alexander's period the Ptolemies had their turn at the island, which was for some time a dependency of Egypt, ruled by a Viceroy of the Ptolemaic family: the last of these viceroys got into hot water with a powerful Roman, who had influence enough to get a decree passed to constitute the island a Roman province, a piece of annexation which was carried out under the orders of no less a person than Cato; and in 52 B.C. Cicero was pro-consul of the island, which was still under Roman rule at the time of the visit of St. Paul, who is related to have performed a miracle in the presence of the then pro-consul, Sergius Paulus. Under Constantine the island was one of the richest provinces of the empire, to which it continued to be attached during some centuries after the transfer of the seat of empire to Byzantium, in spite of numerous attempts on the part of the Arabs to obtain possession of it; an aim which they only temporarily realised during the first half of the tenth century. Another element was introduced into the island from the fact that it became a frequent halting-place for the crusaders, and it came temporarily into the power of Richard I. of England, who sold it to Guy of Lusignan, a French Crusader, from whose dynasty, after many ups and downs in war and policy, Cyprus passed into the condition of a Venetian State, through the alliance of its ruler with the beautiful Catharine Cornaro, who makes such a noble figure in Venetian history, and who, after her husband's death, gratified the greed of the Republic by abdicating in its favour. The island was formally taken possession of by Admiral Francesco Priolo in the name of the Republic, and it was General Cesnola's fortune in 1874 to stumble on a remarkable relic of this event in the shape of some fragments of a marble slab, in a church now used by the Turks as a granary and stable; on the upper part of which slab was carved, in low relief, the lion of St. Mark and a view of the town of Famagosta, with an inscription, nearly beaten out by the horse's hoofs, but of which enough was legible to show that it was in commemoration of the Admiral of the Venetian fleet and his official visit on February 28th, 1488. The Republic retained the island till 1570, when it was conquered by the Turks under circumstances of great barbarity, and has remained under their genial rule ever since.

In the course of so changing a history, and the successive prevalence of so many nationalities, it cannot be surprising that the art of the country should have presented an unusual and varying character. The very first object figured in General Cesnola's book is that of a distinctly Assyrian sculpture, a single figure in bas-relief, which is now in the Berlin Museum, and was found in the outskirts of the "marina" or coast portion of the town of Larnaca.* This was previous to the arrival of General Cesnola, who commenced his researches merely in a kind of casual manner in the neighbourhood of the town, finding on a mound near the "marina" a number of small terra-cotta figures of very various character, artistically speaking; some of them almost Greek in feeling and drapery, representing complete and tolerably well-proportioned figures; some of them entirely misshapen and barbaric in character, and representing figures with animals' heads, reminding one very strongly of some of the Hissarlik potteries, though the author refers them rather to Egypt. Thus at the outset is brought out the remarkable mixture of styles which forms the characteristic of the Cyprian artistic remains. The author subsequently found in the neighbourhood the remains of a Phœnician temple, a tomb with a remarkable sarcophagus with a female head carved on the lid, resembling very much the Phœnician sarcophagi from Sidon, preserved in the Louvre; a sarcophagus of the Roman period, with sacrificial bulls and garlands carved in relief upon it, and various vases and sepulchral *cippi*. After experimenting a little in this neighbourhood, and visiting the sites of Amathus and Paphos, the two other principal cities of Phœnician origin, General Cesnola came to the conclusion that a systematic exploration would be worth undertaking in every sense, but could not prevail on any of his acquaintances in Europe or America to embark capital in the enterprise. After additional difficulties with the Turkish authorities, who pretended that a special firman was required to authorise any digging, and who seem to have been entirely routed by the combined firmness and shrewdness of the American consul, the latter concluded to depend only upon himself, and devoted all his private means to exploring the antiquities of Cyprus.

This systematic exploration was commenced first at Dali (the ancient *Idalium*), whither the consul was driven to seek refuge from the excessive heat of Larnaca. The ground on the hill of Dali was honeycombed with tombs at a depth of 9 ft. or 10 ft., numbers of which were opened, and in most cases a platform was found round three sides of the interior, on which were three skeletons laid, or in some cases only two, laid longitudinally, always with their heads to the entrance, the centre space being occupied by vases and other mortuary objects. These General Cesnola considers to be all Phœnician; they are, at all events, very ancient, and many of the vases which are figured have a striking resemblance to some of the Hissarlik pottery. A few of them are in the South Kensington Museum, and among these may be noticed the peculiarity to which the author draws attention in some of those of which he gives illustrations, that the ornament is formed by circles described *vertically* on the sides of the vessel, instead of in the usual and natural manner of making such ornament horizontally in the process of turning on the wheel. He considers this fact to be an indication that, old as these works are, they belonged relatively to a time of decadence in the potter's art; and we agree with him that this way of placing ornament on the vessel looks like a deliberate attempt at novelty for the sake of novelty, always the sign of a declining taste. In the midst of these excavations, the workmen stumbled suddenly on another series of tombs at only about 3½ ft. deep, which were found full of articles of a totally different stamp, and obviously Roman in character. At the end of his third year's exploration at Dali, General Cesnola had opened about 10,000 tombs, and had collected from them an immense number of vases and other objects of historical interest. The next step was the exploration of some rock-cut tombs at the village of Alambra, a little distance west of Dali, which appeared to the excavator to be among the most ancient in the island, and which contained many of those little earthenware figurines found in other semi-Greek sites, about the intention of which there has been much controversy. General Cesnola disposes of the idea that they were children's toys, as has been supposed by some, by observing that he never found in any of the tombs in which these figurines occurred any skeleton of a child, but he did observe that wherever the nude female figures occurred there were also found articles of feminine toilet, such as a mirror and long hairpins and needles; which fact points to the conclusion that these were figures repre-

* Cyprus: its ancient Cities, Tombs, and Temples. A Narrative of Researches and Excavations during Ten Years' Residence as American Consul in that Island. By General Louis Palma di Cesnola. With maps and illustrations. London: John Murray. 1877.

* Many of our readers may not be aware that the word "copper" is derived from "Cyprus." The ancients had apparently no distinctive name for copper, except as one of the various forms of metal called χάλκος by the Greeks, and *æs* by the Romans (usually translated "brass" in our dictionaries), and as Cyprus furnished the best and greatest part of this metal, it came to be called χαλκος κύπριος and *æs cyprium*; thence shortened into *cyprium* and *cyprum*, German *kupfer*, English *copper*. The name of the island is conjectured to have been originally derived from the Hebrew name (*kopher*) of a plant that was abundant there, and much used to produce certain oils and unguents,—a derivation which, as the author remarks, corresponds in its method with that of the name of "Rhodes" from the rose.

* Larnaca proper is three-quarters of a mile inland, and there is an almost separate seaport suburb called the "marina," which is considered as part of the town.

senting Venus, or at least having a signification in regard to the sex of the occupant; and similarly, wherever a terra-cotta horseman was found in a tomb, there were also found along with it one or two spear-heads. These facts appear conclusive as to the object of the figures in question, specimens of which may be seen at the South Kensington Museum. But we doubt very much whether the small coloured figures of women found at Tanagra, and of which there are such a number in the British Museum, can be explained on the same hypothesis, as General Cesnola appears inclined to suppose. Figures and heads almost precisely similar to these Tanagra specimens were found by General Cesnola at Soli; engravings of some of them are given on page 230, and several specimens are to be seen in the cases at South Kensington containing his articles; and these latter (as we observed in the course of a few remarks last year on "changes and additions at South Kensington"), seem to explain the real object of the Tanagra figures, all of which have a break behind, as if they were to be or had been attached to something as ornaments, exactly in the way in which two similar figures are attached to two vases in the Kensington collection; and our impression still is that the great find of these pretty coloured statuettes at Tanagra was on the site of a manufactory of the article. The ruder Phœnician terra-cottas found in the tombs at Alambra are in quite a different category, and General Cesnola's theory of their meaning is probably correct: at all events, it explains them better than any other. These tombs at Alambra contained also vessels with two spouts, and others in the rude form of animals, almost precisely similar in outline and feeling to the corresponding objects in the Hissarlik collection, except that they are rather more ornamented with surface decoration.

The next series of excavations undertaken was in the neighbourhood of Athieno, the ancient Golgoi, not very far from Dali. Among the objects found at the commencement of the explorations here were some sepulchral *stelæ*, surmounted by winged sphinxes, and one of a rather ruder and earlier type, surmounted by two couchant lions back to back, underneath which was the well-known Egyptian symbol of the winged globe. In the same neighbourhood was found a sarcophagus, with sculptured figures in relief, of warriors engaged either in hunting or in combat (the presence of animals prominently in the composition renders it difficult to say which was intended), most remarkably resembling in style, costume, and action the pediment figures among the Xanthian marbles. Here we have again in juxtaposition symbols and styles which we usually connect with two totally distinct and comparatively distant localities, as distance was counted in the early ages of locomotion. But one day, just before an important meeting of consuls for a conference, arrived the news of a colossal stone head, discovered at a place called Aghios Photios, near Athenio, and urgent requests for a cart to remove it at once, before the proprietor of the land could interfere.* General Cesnola describes with a *naïveté* that is really amusing, whether intended so or not, his impatience of the proceedings of the consular meeting, and the "trivial questions" urged by members who, we may suppose, had *not* heard of any colossal heads awaiting removal. However, eventually these official trivialities were got over, and the General hurried off to the real work of the moment, learning the pleasant news on the way that his newly-found treasures had all been claimed by two of the police in the name of the Sultan. It was night when he galloped on to the scene of action:—

"All Athieno was bivouacked on the desert-like plain of Aghios Photios; the moon was not yet risen, and large fires were lit at different points, throwing fantastic shadows as men moved about, eagerly gesticulating and conversing. The light falling on their parti-coloured dress, gave them the appearance of a band of brigands, which in some measure they were. They numbered more than a hundred, and their shouts, altercations, and attempts at song made a perfect Pandemonium.

I may here be allowed to state that the successful issue of my affair with the Governor of Larnaca had favourably impressed the local authorities towards me, and had become well known to the populace. This now stood me in good stead. As I approached, the news spread of the arrival of the American Consul, and the uproar and confusion instantly ceased. Having been long accustomed to the control of large bodies of men during my military life, I had not much difficulty in comprehending the situation. At a little distance the two Turkish policemen were standing guard over the sculptures, and I at once rode towards them, dismounted, and ordered one of them to take my foaming animal in charge, and walk it about, which he did without question. I then called the other Zaptieh and motioned to him to disperse the crowd and clear a space round the sculptures. He obeyed as promptly as his companion, and these steps had due effect upon the multitude. I then saw for the first time the colossal head. As its massive stony features were revealed to me by the fitful gleams of the firelights, there arose a vision of a people whose master-hands had ages ago withered and fallen into dust. But this was no time for idle dreaming. I now ordered the carts to be brought near, had the sculptures carefully placed upon them, and giving my mule to M. Andrea Vondiziano, requested him to escort them on the way to Larnaca until he should meet with my cavass, to whose charge he could deliver them and return to Athieno. Thus I may say that I rather captured than discovered these stone treasures. And this was all accomplished without the dissenting voice of a single person; each one doing what he was requested to do with alacrity,—without a murmur even from the owner of the ground, who, however, followed me like my shadow."

This is a very graphic description of the kind of excitement which attended relic-hunting in Cyprus, and gives a good specimen both of the General's style of writing and of his ability to get his own way among Turkish officials and their subjects, of which there are several instances that are not a little amusing, and lead to the conclusion that the American consul must have been a difficult person to take advantage of. Among other ingenuities, when he had reason to believe that articles had been stolen, he produced Mr. Layard's book on Nineveh, and made it play the part of a book of divination, pointing to an illustration nearly resembling the abstracted article, and demanding its instant restitution,—the Cyprian mind being thereby persuaded that he had a book that showed him images of everything that was stolen. To return, however, to our antiques: Aghios Photios produced a remarkable collection of statues, some of them in a quite complete state, and representing an art compounded, as one might say, half of Egyptian and half of early Greek, some of them having points recalling the Branchidæ antiquities. One of the principal statues, a fully-draped bearded figure holding a dove, is very curious, as, in spite of the beard, there can, we think, be little doubt, from the development of the breasts of the figure, that it represents the goddess herself, bearded statues of Venus being not unknown; in fact, General Cesnola found two bearded female figures among the terra-cottas at Amathus. He hazards the conjecture doubtfully in regard to this figure, but to our thinking there can be little doubt about it. What mis-shapen conception this idea of a bearded Venus indicated, it would, perhaps, be "too curious" to inquire at this distance of time.

We have said enough to bring before readers whose attention has not been drawn to the Cesnola collection otherwise, the peculiar nature of the interest which attaches to the remains of Cyprian art, figured and described in this book, as representing a meeting-point at which the art of the surrounding nations was blended and fused. We may just notice the value and interest of the treasure of gold ornaments and gems found at Curium, in regard to which we note with interest one remark of the author, that as a general rule "when the mounting of these gems is in solid gold, the engraving on the stone is of different workmanship, and that, in fact, the artistic value of the ring rises in inverse proportion to its intrinsic value." We must refer our readers to the book for the rest of General Cesnola's labours in Cyprus, and the account of the ruse by which he in the end managed to get all his treasures shipped for London in defiance of the last act of hostility of the Turkish Government, who endeavoured to prevent his exporting them, but on the whole seemed to think better of him for having outwitted them. The late French Emperor had intended to purchase the whole collection, but the Franco-German war intervened. For some time previously to its departure the collection had become one of the lions of tourists, and "Cook's parties" would arrive in scores, take possession of the garden and court-yard, insist on seeing the American Consul's "museum," and if he was present, would ask impossible questions; one "elderly English lady, with the proverbial ringlets," who had examined the Athieno statues for some time, having asked him in the gravest manner "if he would be so kind as to explain to her the mysteries of the worship of Venus!" But, in spite of the heat and Cook's tourists, the Consul seems, from the conclusion of his book, to have quitted the shores of Cyprus with a certain regret, even a shade of tender sentiment. All readers of his book have reason to be glad of his appointment to the post which he filled for ten years. The volume is in every way a typical work of the kind, lucidly and agreeably written, and beautifully printed and illustrated. It is "affectionately inscribed," we may add, to the lady who refused to be carried out of the boat at Larnaca, "as a tribute to her love and devotion under great trials."

* We confess we are a little puzzled in regard to the philosophy of *meum* and *tuum* in some of these transactions, as related by the author.

ARCHITECTURAL THEORY IN AMERICA.

THE proceedings of the American Academy of Arts and Sciences contain an essay of considerable interest on an architectural problem, by Mr. Charles Eliot Norton, the professor of the History of Art in Harvard College. The author is well known personally in England, but hitherto chiefly as an elegant Italian scholar, and by a translation of the "Vita Nuova" of Dante. The report bears the date, as presented, October 10th, 1877; it is entitled "The Dimensions and Proportions of the Temple of Zeus at Olympia." This is the temple, on the site and in the precincts of which the exploration conducted at the expense of the German Government has already brought to light such important remains. Sculptured groups which adorned its pediments are being exhumed, and promise to go far to complete as well as to confirm the descriptions of the ancient traveller, Pausanias, who saw them uninjured and in their places; and in some instances these discoveries bring us further comfort by disposing of certain pertinacious theories as to schools and styles of art that developed rather rankly in Germany in the absence of positive information, by that process of evolution from within which has become proverbial. Three years ago it could more reasonably be said of these works, in a history of the Age of Pericles, to which they by date belong, "as we know nothing of the style of Pæonius of Mende, it were futile to speculate as to his treatment," &c., but the works may now speak for themselves,—will speak to those, at least, who see the originals at Athens, or can spare leisure to visit Berlin for a sight of the casts, or who perhaps may come upon others in America: we will not give up the hope that for the credit of the country our own generation will yet see the establishment of a public exhibition in London of casts of all the finest and most interesting sculptures of antiquity, and of these sculptures of Pæonius and Alcamenes among them. Considering what has been already found, it is not easy to set bounds to sanguine hopes as to what may not be turned up from the alluvial accumulations which cover deeply the ancient scene of the Olympic games, and all the celebrations that attended them. One matter of anxiety is, lest, in the fervour of research for works of plastic art and inscriptions, sufficient time and attention may not be spared to observe and measure, and record with the utmost fulness and exactness, all the details that are still with care recoverable of the architecture and proportions of the temple itself.

A few notes of dimensions have been published to supplement or correct those which were obtained by the partial excavations of the French Scientific Expedition to the Morea; but very few. The dimensions given by Blouet in the plates and text of the French work are most unfortunately inconsistent as well as scanty. The measured length and breadth of the stylobate do not bear out the statement that they are in conformity with those which are given by Pausanias, and the differences of columniations as set down are reducible to no system, and are much too excessive to be referred to indifference or accident in execution. This is unpromising enough, and we cannot but open Mr. Norton's essay with serious misgivings as to the probability of his making anything out of such materials for theorisation. If he has not done so, it is certainly not for want of application. For the most part, it is his view to proceed on the lines of a memoir to which he refers,—"On the Systems of Proportion employed in the Design of the Doric Temples at Phigaleia and Ægina," by William Watkiss Lloyd, appended to Mr. Cockerell's splendid work on these temples. London, 1860." "Mr. Lloyd," he adds, in explanation of his repeated references to this memoir and to a paper "On the General Theory of Proportion in Architectural Design, and its Exemplification in Detail in the Parthenon," in papers read at the Royal Institute of British Architects, London, 1859, "has made a valuable contribution to the establish-

ment of some of the leading principles of the science of Greek architecture." He also refers for important materials for the study to Penrose's admirable work on the Parthenon, published by the Dilettanti Society. The essay, accordingly, is devoted, in the first place, in accordance with these indications, to the discovery in this Olympian temple of the simple ratios of low natural numbers, to which he observes that the Greeks attached great value, not merely in the columns, but also in the proportions of the other parts and divisions of their structures.

This hexastyle Doric temple was the largest ever erected in Peloponnesus; our limits for its date are very wide,—between 435 B.C., when it was certainly complete and housed the colossal ivory and gold statue of Zeus by Phidias, and 572 B.C., almost a century and a half earlier, when the Eleians conquered Pisa, and were said to have founded the temple from its spoils. This is uncertain and vague enough; but the size of the temple —its columns had a diameter exceeding those of the Parthenon—is no presumption against an early date in the period which saw the erection of the first Parthenon, and the great temple at Samos. Nor is an early date inconsistent with observance of certain very precise principles of proportion,—albeit not so refined and elaborate as are found to rule in the Parthenon. Such rudimentary principles have been identified in the archaic Temple of Zeus at Ægina, and even in the still more archaic group of Doric columns at Corinth, in their composition as well as diameters. The text of Pausanias gives three dimensions, for the length, breadth, and height of the temple, which, however, fail to accommodate any simple proportions, and a better result might be hoped when the examination of the ruins proves that two of them at least are certainly wrong. Unluckily the new dimensions are not more helpful. In consequence, the theory which Mr. Norton builds up is dependent on hypothetical corrections that cannot be readily admitted unless as simply good for hypothetical conclusions. With this reservation they certainly deserve full praise for ingenuity. For an advance beyond these we must wait for the results of a survey of the ruin, executed with some approach to that rigorous conscientiousness which makes the work of Mr. Penrose on the Parthenon the basis and the test of any speculation on Greek architecture,—a veritable "possession for ever."

The essay includes a comparison of results, whatever their value, with a learned summary of the Pythagorean musical scale and doctrine of numbers as the key of Nature as well as art, and a collection of ancient authorities as to absolute and inherent qualities, conceived to be inherent in some mystical way in particular numbers. This subject has considerable antiquarian interest; but, from a scientific point of view, what is more required is the completion of a reasoned exposition of the appropriate part which proportion plays in architecture, as an art not subordinate to music, but co-ordinate. Music has its architectural characteristics, as all composers know, in precisely the same sense as architecture comprises musical. The subjects can only be treated satisfactorily in conjunction, but for that very reason confusion can only be avoided by a a strong line dividing the provinces of proportion, for either art. In the meantime we can but greet this sympathetic contribution from America with the most cordial satisfaction.

Factory Statistics.—In accordance with a resolution adopted at the Trade Unions Congress at Leicester in the autumn, it is stated that the Parliamentary Committee of the Trades Council are about to memorialise the Home Secretary (Mr. Cross) in favour of having the statistics relating to the various manufacturing industries in the United Kingdom, which have hitherto been prepared by the factory inspectors, published periodically. Up till now these returns have been collected and issued at irregular intervals of time, on the motion of a member of the House of Commons. With one exception also they have been limited in their application to our textile factories, but the Trades Council propose that they should embrace all branches of manufacturing industry. The administration of the Factory Department being now concentrated under one chief-inspector, Mr. Alexander Redgrave, C.B., the preparation of a periodical return of this kind will in the future be greatly simplified.

"BUILDINGS,"—"MANSIONS,"—"FLATS," "RESIDENCES,"—"DWELLINGS."

A CORRESPONDENT, possibly with the intention of paying a seasonable compliment, has sent us an inundation of tracings, photographs, and descriptions of associated blocks of residences erected in Chicago, Boston, New York, and other American cities, together with some in Vienna and Glasgow. He has also sent us the plans and an elevation of a similar building suggested for erection at South Kensington; and descriptions of others intended for Knightsbridge and Northumberland-avenue. In fine, he asks, with derisive emphasis, are these the things you, artistic and sanitary apostles, are prepared to advocate for the improvement of the London house and the English home? Many of the designs sent to us are of finished buildings now full of tenants; in most of them the entrances common to several groups and families are narrow, small, and ugly,—not much better than the ordinary private entrance to the apartments over a London shop. The halls and lobbies of the different sets of rooms are not only dark, but the majority have no means of obtaining light and air except from the rooms into which they lead and from the staircase with which they communicate. Moreover, the staircases are often only lighted by a skylight at the top of five or six stories; and in one instance, a "light and air shaft" from which stairs, hall, servants' rooms, and closets receive light, possesses the magnificent dimensions of 9 ft. by 3 ft. In the plan of the Viennese house sent to us, three rooms in each set are approached one through the other; in the Glasgow house the kitchen and bed-rooms of each set are next the entrance-door, and the two living-rooms are divided by a small bed-room. The plan of a flat on the ground-floor in a block of residences situated in a mews near Baker-street is included in the new year's gift we are acknowledging; and in this flat, which we are told commands 60*l.* per annum, a few miserably small and irregular rooms open into an unlighted narrow passage with the doors of the sitting-room and the kitchen in close proximity, and with the principal bed-room next the entrance-door.

We have never approved such a system of distribution; and it ought to be unnecessary for us to add that we regard the flat or horizontal system of house arrangement as the remedy for actual evils in an old city rather than the basis of plan for new houses in a new one. Years and years ago correspondents addressed letters to this journal, and we wrote articles, concerning the London lodging-house in which innumerable families, of all classes below a certain grade, may still be found in the heart of the metropolis. We have always looked upon such a lodging-house, of which no other European capital can boast, as a calamitous medley of extemporal divisions and sub-divisions, wherein no one group or one family can be privately or comfortably lodged. We have even hesitated to praise many of the new skilfully-planned blocks of French houses, simply because the method of building round a closed courtyard, and the internal "light and air" shafts to be found in them, are not to our mind desirable acquisitions for this country. Yet undoubtedly, in Paris and in Paris alone,—for all other cities have taken the French metropolis as their model,—is to be found the principle upon which new houses in the new streets of Central London should be planned. Towards the close of 1876, we said:*—"The Continental architect has solved the problem of housing numerous families and groups under one roof in a popular and an economical fashion; and though his work may be still blemished with many sanitary defects, it is infinitely better,—more scientific and artistic,—than anything to be found among those worn-out houses which contain the extemporised homes of thousands of Londoners, many of whom, though scandalously lodged, are neither poor, ill-educated, nor ill-bred."

Those very few English people who understand the flat system of house arrangement and organisation know also why the Romans adopted it for their Capital, and why Vitruvius recommended it; they know when and how the "house in flats" or "apartment house" rose in the French Capital at the end of the seventeenth century. But the ordinary Londoners,—and we include many architects therein,—have little or no conception of the art of planning a block of flat houses. The prevailing idea seems to be that to plan a flat of eight rooms it is only necessary to jumble together upon one floor the eight rooms of a vertical house, which is scientifically divided by floors into kitchens, sitting-rooms, and bedrooms. But, on the contrary, the greatest ingenuity and labour have often to be expended over so small a matter as the distribution of a flat dwelling-house of seven or eight rooms. If London architects and builders would diligently examine every house in the Boulevard Malesherbes or the Boulevard Haussmann they would be astonished to find in each some individuality of arrangement. They would be equally astonished to perceive,—as they could not fail to do,—that, though most of the houses are practically speculations,* often built by contractors of some branch of building construction, yet accomplished architects have designed them; the works have been superintended by architects,—the relations between the professional man and his client being precisely the same in their case as those usual in the erection of private mansions for noblemen or gentlemen. At the same time, Parisian speculators do not choose the suburbs of Paris to build huge houses of a shape and distribution intended exclusively for the crowded parts of a capital city. Even in the neighbourhood of the Arc de l'Étoile, there are now quite as many villas or small hôtels as there are maisons-à-loyer. In the vicinity of the Bois de Boulogne the roads and avenues are dotted with detached houses; and the same kind of villa residence is to be seen at the Bois de Vincennes. To suppose that we desire the Finchley-road or Haverstock-hill to be lined with tall blocks of mansions divided horizontally into numerous sets of residences, would be sheer nonsense. The flat system is applicable only to crowded centres, where a large number of persons require or desire to share in the advantages of a particular site, or a particular neighbourhood. We repeat our old dictum: to build vertical houses of three or four stories with a frontage to the street of 20 ft. or even 30 ft. is an extravagant method of covering costly land in the heart of London.

Nor would we advocate the erection, for any class of her Majesty's subjects, of huge blocks of dwellings which we have already ventured to term "barracks." It was announced a short time ago that a mansion was to be founded not far from Hyde Park-corner on the co-operative system, and it was to accommodate 600 families. Admit an exaggeration, and say that only sixty families were to be invited to partake of mutual household bliss, it is, at least, six times more than it is usual to find in first and second class Paris houses. We mention this because, in the dawning appreciation amongst Londoners of the advantages of which the flat system is possessed, there is every possibility that large sums of money will be lost over misunderstood and ill-considered attempts to introduce, not the economy of the French "*appartement*,"—not the luxury of the American "hotel" or "apartment house,"—but something purely English in its speculative promotion, its unscientific and inartistic arrangement, and its vulgar extravagance. People who believe that the improvement of a large part of Central London depends upon the introduction of shops and houses, similar to those that adorn Paris, would be the last to baulk any scheme for building good houses in flats. But it should be remembered that a great smash, or the serious failure of a company started for the erection of houses on the flat-system, would do harm, and increase the actual prejudice against flats, in the eyes of the masses who do not understand the subject. It is very natural and business-like to suppose that the greater the number of families you can house under one roof the more chance there is of such a speculation paying; the greater the number of people who co-operate the greater the means of combining luxury and convenience. But though undoubtedly London is cursed with an infinity of vertical party-walls which might be advantageously dispensed with, we would rather have the party-walls as they are, than dispense with them altogether. A party-wall has a moral as well as a fire-resisting value. Yet one of the projects we have lately examined consists of an enormous block of mansions arranged round a closed courtyard of about 100 ft. square, and covering an area of at least 300 ft. by 200 ft., without a single party-wall. The suggested building is intended for a plot of land, about

* *Builder*, vol. xxxiv., p. 968.

* They are called "Maisons de rapport."

1½ acre in extent, situated between the Albert Hall and Lowther Lodge, and necessarily it is to front the Kensington-road. In order to erect it a company has been started with the hope of obtaining a capital of 100,000*l.*, in 10,000 shares; and it has been formed, so says the prospectus, "for the erection of mansions on the flat system, which has been so successfully carried out by Mr. Hankey at Queen Anne's-gate, and elsewhere in London." Now, we presume to think that not only the principle of the flat system, but even its economy, has been misunderstood in the design for the Albert Hall Mansions; and it may be well to explain that from pavement to point of gable the suggested building is to be 110 ft. high, comprising, with the basement, nine stories. Of the design the less we say the better; suffice it, that an Athenian would not have understood it, a Roman would have called it barbarous, a Goth would have shuddered at it; yet it has received the distinguished approval of a distinguished architect.

A few words as to the general points of arrangement in the suggested mansions next the Albert Hall. There is to be a main entrance, which is to take the form of a *porte-cochère*, and under this, one porter is to be stationed in a spot whence he can see none of the entrances to the different staircases. In spite of this covered main entrance, there are no means of entering, under cover, from a carriage, any one of the staircases; no use is made of the covered main entrance to set down from cabs or carriages the inmates or their visitors. The excellence of the French plan, which partly consists in compelling every inmate of a block of houses to pass in and out through the *porte-cochère*, is ignored; yet, as all club managers know, only thereby can a strict guard be maintained. On the ground-floor of the proposed mansions there are six sets of apartments, the largest of thirteen rooms, and the smallest of eight rooms; the upper stories contain eight sets on each floor, the largest of fourteen rooms, the smallest of eight rooms. The majority of the rooms of each set open into one continuous corridor; not the smallest attempt is made to divide—except, perhaps, in the fourteen-roomed house—the different sections of a dwelling. With the exception of one block (marked F on the plans before us), none of the corridors receive any direct light. They are lighted and ventilated by shafts, some of which are shown to be about 20 ft. by 6 ft. in area, and these shafts are necessarily 100 ft. in height, measured from the level of the courtyard. Some twenty-eight rooms on each floor are lighted solely from the courtyard, which, though 100 ft. wide, is surrounded by buildings 100 ft. high. Of course, we quite understand that both the plans and the elevation appended to the prospectus of the Albert Hall Mansions Company are mere sketches, and that the impossible, though effective, shadows etched upon the elevation are merely accidentally artistic. Great improvements in the details of arrangement may yet be made in the working drawings, but not enough, we fear, to render a colossal building of so complicated a character either healthy as a residence or economical as a home. The best advice we can offer to the architects of the incipient company is to begin another set of plans; to regard the American buildings, of the description they are evidently ambitious to emulate, as utterly opposed to the building traditions of London, or even Paris; and, above all things, to remember, while designing a new elevation, that the modern world will be 1900 in twenty-two years' time.

Joinery from America.—A new trade has lately grown up between Europe and America which must, sooner or later, be felt in an important branch of native industry. It is not generally known, but such is the fact, that American upholsterers are now exporting to Great Britain and the Continent large quantities of ready-made furniture, from kitchen chairs and tables to the most elegant accessories of the drawing-room. The facility with which these objects are turned out is almost marvellous. But, according to the *Globe*, it is not only in the matter of household furniture that competition is to be dreaded. The Americans are now sending us window-sashes, doors, skirting-boards, panel work, wainscots, and all descriptions of joinery, including very cheap coffins.

THE OLD MASTERS EXHIBITION.

It would be a mistake to say that the ninth winter exhibition at Burlington House is equal to most, or perhaps to any of its predecessors. No one who knows how rich this country is in old paintings would conclude that the deficiency is owing to the resources of the private collections being exhausted. On the contrary, we have no doubt there are in England enough art-treasures to supply a good many more winter exibitions of the highest class, even omitting sketches and studies, which the proprietors of the Grosvenor Gallery have taken specially in hand. But there is a limit to the readiness of owners to lend. Those who have once done so are unwilling in some cases to repeat the risk or the trouble; otherwise, even if the highest class of paintings were exhausted in a year or two, many frequenters of these exhibitions would be very glad to begin the same set over again after a lapse of ten or twelve years. But that is hardly to be thought of, we fear.

The Academy have, during the last two or three exhibitions, aimed more or less at having a point or speciality in the collection, some set of works which are not usually seen, or the collection of which in one set of rooms presents special points of interest in the way of comparison. Thus, last year we had Raeburn's portraits,—a singularly successful hit, for they were so little known to many, and their remarkable merits caused so much surprise among those not previously acquainted with them, as to give rise even to an exaggerated and over-enthusiastic estimate. This year there are two specialities,—the exhibition in one room of a representative collection of the works of the so-called "Norwich school" of painters, and the collection of a large number of engravings after the works of Reynolds, Gainsborough, and Romney. Of this latter portion of the exhibition we may say at once that it appears to be the most thoroughly enjoyable of the whole; though we shall not, on this occasion at least, go into any detailed comments upon it, as it consists of engravings which are mostly more or less known, of works which are well known. But to find two rooms full of fine engravings from the three masters above-named, enabling us to enjoy and compare, within a comparatively small space, the most essential qualities, at least, of their art, is certainly a pleasure of no ordinary kind; and it is a remarkable proof how intrinsic is the source of interest in these works, that so much of their characteristic refinement and feeling is preserved in a form in which they are deprived of the advantage of effect arising from colour and scale. They form a beautiful collection, and their small size makes comparison easier and more comprehensive than usual.

As to the other point in the exhibition, it is somewhat of an illusion. In the first place, there is no "Norwich school." What is so called consists simply of Crome, and some inferior artists who imitated him, and of Cotman, who was quite above imitating Crome or any one else, and whose whole style and manner is so distinct from that of Crome and the Cromites as to preclude all idea of classing him with them. Of the latter, the one who comes nearest to his original is Stark, whose trees and foreground tones especially have a marked resemblance to the work of his model, so far as intention goes, though he is mostly feeble and deficient in atmosphere and breadth of effect in comparison with the real Crome. Vincent is mostly but tame: his "View from Sandlings Ferry, Norwich" (12) is the best, and has a good deal of quiet beauty. Cotman, who was potentially a more original genius than Crome, though owing to circumstances he accomplished less, has been far better represented in previous loan exhibitions, and no kindness is done to his memory by exhibiting such specimens of his work as No. 26 and one or two others; his "Windmill" and "Old Houses, Gorleston" (29, 30), are very powerful sketches,—the latter an instance of his intensity of representation, for the tenements seem to represent the very acme of dilapidation. Of Crome there are some very fine and not well-known specimens, especially the landscape (17) lent by Mr. Fordham, representing a road through a wood: it is seldom we see a picture in which we can so completely look through and through the landscape as in this. "On the Wensum" and the "View of Norwich" (47, 48) have also most beautiful qualities; the latter in design and tone having strong affinity with the earlier art of Turner. The artist's portrait of Opie hangs in the room: a head showing power without much refinement; indeed, Crome's advantages of birth and education were of a very negative kind. With his landscapes should be compared the fine "Study of a Burdock" (23), which might serve as a companion to the equally powerful "Thistle" which we remember in a former exhibition.

Passing to the more miscellaneous part of the collection, we are greeted in the second gallery by Reynolds's well-known portrait of "Lavinia, Countess Spencer," a face so beautiful in its combined tenderness and brightness of expression that one can hardly see it too often. A central object in this room is the Duke of Buccleugh's Canaletto representing the view of Whitehall looking towards Charing-cross, a splendid specimen of the artist's best powers, and so minute in its realism as to be a valuable topographical relic. On the right we look across Whitehall Gardens to a sketch of the Thames, and St. Paul's in the distance; on the left we see the present site of the Government Offices, occupied by a row of those tall, substantial prim-looking red brick houses, some representatives of which are still left at the Park end of Downing-street. Next to this is a somewhat remarkable-looking, but to our thinking, rather doubtful Terburg; an equestrian portrait of the Duke of Alva, by Rubens, of which the horse is the best part (the face, by the way, is quite unlike the received portraits of Alva); and two Lady Hamiltons, by Romney, of which No. 83 is much the best, but the contrast in style and character of the two representations of the same lady is certainly striking. Reynolds's portrait of Lady Cockburn and her three boys (89) is remarkable as one of the only two which he signed (Mrs. Siddons as the Tragic Muse being the other); the children are carelessly drawn, but the face of the principal figure is noble in pose and execution. His little girl with the dead bird (96) has a marked individuality about it, almost as much so as the more famous "Strawberry Girl," though not nearly equal to the latter in colour. We must just notice Gainsborough's portraits of Madame Le Brun and Mrs. Billington, the latter noticeable chiefly for its historic interest, and his highly characteristic "Dorothea, Lady Lethbridge" (108), a half-length side-face, in an oval, of a thin, straight-lined, but aristocratic figure, who looks as if nothing would move her from her *nonchalance*. The most decidedly unique work in this room is, however, the Jan Steen lent by the Queen, called "The Bedroom" (120), where the spectator looks through an arch flanked by columns into a bedroom where a Dutch damsel sits on the bed, from which she seems to have just risen, putting on her stockings, her thin legs bare to the knee; a lute and other objects are littered about the floor: a more odd mixture of a formal foreground and a slatternly interior, of splendid painting bestowed upon an uncouth and uninteresting scene, it would be hard to find.

The place of honour in the large gallery is occupied by Reynolds's "Cymon and Iphigenia," too well known to need description here; the finest point in it is the head of the sleeping beauty, rich in tone and contour, and flushed with the warmth of slumber: in his treatment of the clown Reynolds has not been happier or less vulgar than some of his predecessors. At either angle of the same end of the room are two remarkable portraits, that by Gainsborough of "W. Grant, Esq., of Congalton, skating in St. James's Park" (128), one of those experiments the painter was fond of indulging, an effort to catch his subject for portraiture at a moment of action involving a special attitude and appearance of movement, as in that portrait of a lady dancing which was in Burlington House a year or two back. "W. Grant, Esq., of Congalton," is a very fine and dignified looking man, but he skates rather too placidly, nor is the swing of the body quite realised. The opposite work is an exquisite Romney, "Mary, Lady Beauchamp" (137), a fair girl in a white dress falling in long floating folds over the figure, gazing upwards with her chin leaned on her hand. Romney's head of "Perdita" (136) is also very beautful. No. 140 is a Titian of very fine qualities,—"Portrait of a Youth" standing at a table, in black velvet dress just relieved by a thin gold chain and a slight end of a lace cravat at the throat, in the way Titian was so fond of producing a light spot or line to set off a costume of this kind: the head of the youth is very rich in colour, with the ripe full-blooded look of perfect health under a southern sky. But we have

passed over a fine Velasquez, the "Portrait of a Spanish Alcalde" (130), a three-quarter figure of a dark stiff Spaniard standing with his hands before him holding a letter, and looking immovably official; the painting has not perhaps so much defiant originality as we sometimes find in the portraits of Velasquez, but it is a more powerful thing than any of the Vandycks in the room, some of which are sumptuous enough in effect, but deficient in distinct character and expression. An interesting work is that of Angelo Bronzino, called "Portrait of a Youth" (149), who seems to have been a sculptor, judging from the statuette on the table and the figure of a nearly naked man (the model?) on the balcony in the background; the picture is hard and deficient in force of colour, but there is great character and feeling in the head. Vandyck's "Marchesa de Brignolé and Child" (158) seems somewhat faded also in colour, but in some other qualities it is the finest specimen of the painter in the exhibition; among other things the beautiful drawing of the left hand which droops over the arm of the seat is to be noted. Rembrandt's duplicate portraits of a Jewish Rabbi (167, 169), one painted on canvas and the other on panel, but almost photographically identical in design and execution, are full of force, both of character and colour; the canvas is the property of Viscount Powerscourt, and the panel that of the Duke of Devonshire. The well-known "Rembrandt's Mill" is lent by the Marquis of Lansdowne, and throws completely into the background the classic landscapes of Poussin, of which one or two good specimens are here, such as a former generation of criticism would have considered among the best achievements of landscape-painting; but they must take a secondary place now; like all artificial landscape, their repute has been to a certain extent artificial also.

In the fourth room are some portions of the paintings made by Ugolino di Sienna as an altar-piece for the church of Santa Croce at Florence, which was subsequently removed, and (we quote from the catalogue note) "Della Valle discovered it in the dormitory of a neighbouring convent, and it was sold to Mr. W. Y. Ottley, at the beginning of the present century. At the sale of the Ottley collection, in 1847, the various portions were dispersed." The altar-piece is known to have consisted of seven panels, or architectural divisions, with a predella below each; and the sketch restoration of it given in the catalogue shows a row of fourteen small panels, arcade fashion, over the large ones, and seven gablets over these. This arrangement, at all events, is borne out by the shapes and sizes of the portions exhibited here, which include three of the principal panels, each containing a half-length of a life-size figure; four of the small arcade pictures; two of the gablets; and the whole seven of the predella paintings. They are all in tempera on a gold ground, and are very well preserved specimens of the characteristics of the Siennese school of decorative painting; the large figures have considerable grandeur of design and conception, though exceedingly stiff and artificial. A very fine specimen of Giotto occupies the central position in the room, "The Death of the Virgin," a long composition with the principal group in the centre, and with a sloping top, pedimentwise. According to Vasari, the picture was at one time in the church of Ogni Santi at Florence, and was much admired by Michelangelo. Granting the *naïveté* of an early style, the composition is remarkable for the beauty and variety given to the various figures, without disturbing the decorative effect and repose of the whole. In the centre the dead body lies on a stone or marble couch ornamented with delicately-painted inlay; at either end an angel bends over; behind these, each way, is a receding group of spectators with various expressions of grief; the two last figures on the left are especially fine in pose and expression; the last one is turned almost away from the spectator, but there is expression in the drapery and pose of the whole. The golden aureoles of the figures cut and cross each other, and form a background to the whole. The picture is a fine specimen of decorative painting which has soul in it, and is not mere wall-covering. Two very interesting things near this are the painted front of an Italian wedding casket, of the fourteenth century, lent by Mr. Spencer Stanhope, representing a kind of "Decameron" scene with much spirit and fine colour; and an extraordinary work by Mantegna, which is quite unlike what we usually connect with his name, and, in fact, reminds one strongly, in colour, of Giorgione's long, low, decorative painting which was in the Winter Exhibition on a former occasion. The picture is a procession of the triumph of a general, with all Mantegna's wild fancy in the throng of figures and the martial trophies borne along. On the right sits a beautiful youth, with a branch of laurel, who seems to be singing the praises of the conqueror. Among other things of interest in this fourth room (devoted, as usual to specimens of the older schools of painting) are a set of four figures of the Seasons, by Sandro Botticelli, of which "Winter" is incomparably the best,—indeed, the others could only appear good in the eyes of Botticellists; a remarkably stiff but highly-finished portrait of a lady, by Ghirlandaio; a Holy Family, by Luini; and the singular allegorical painting by Holbein, representing the Wheel of Fortune. The small painting of the head of Christ crowned with thorns, ascribed to Leonardo da Vinci, looks genuine; it is, at all events, a very beautifully and delicately modelled head, though with no real pathos, only artistic sentiment, which does not render it the less characteristic of Leonardo.

The fifth gallery, which concludes the oil-paintings, contains a Siddons portrait, by Reynolds, and a Pitt portrait by Gainsborough; Hampstead pictures by Constable; a fine view of the Thames, looking up from below Westminster Bridge, by Canaletto, giving a good idea of the Abbey as it appeared then, the central pile of the view, before it was obscured by its still larger neighbour; and, among other curiosities, a portrait, by Hoppner, of Humphreys, a pugilist of his day, and a good-(and good-humoured) looking fellow too, in fighting costume, and in the attitude of defence against an adversary in the "P. R."

A MANUAL FOR MECHANICAL ENGINEERS.*

THIS is a formidable book, designed for engineers as a work of general reference. We can but glance at it, for it is full of figures; and we are quite unable to affirm, in a casual notice like the present, whether all or any of the figures are facts. But of this we are certain, that infinite care in the compilation of an enormous store of information and scientific investigation is revealed by the complete and deliberate manner in which the book is put together. Over a thousand octavo pages we find rules, tables, and data relating to strength of materials and of elementary construction; to the friction of solid bodies, and to the frictional resistances to mill gearing; to steam-boilers and the steam-engine; to the flow of air and of water; to air and water machinery; to the weight and specific gravity of metals; to heat, steam, combustion, fuel; to fundamental mechanical principles; to weights and measures; to money, British and foreign; together with—besides a host of other things—mathematical tables and geometrical problems, and a short but valuable chapter on Work or Labour.

Besides referring to the stores of learning and experimental data accumulated in the Transactions of the great engineering societies, and in various periodicals both native and foreign, the author cites some 300 authorities, from whom he has been able to draw much of his material.

The chapter devoted to the strength of elementary constructions should be read by those architects who, when they wish to use iron floors, sometimes submit themselves and their own judgment to the engineering specialist. Investigations by well-known men into the strength of cast-iron pillars and cast-iron flanged beams are quoted and compared. One practical result which may easily be remembered, and as easily acted upon, is that the weight which produces moderate flexure in a very long pillar is also very near the breaking weight,—a conclusion, as Mr. Clark points out, of great practical importance. Experimental observations made on the elastic strength and deflection of cast-iron flanged beams show that the limit of load, for uniform increments of deflection, averages about 80 per cent. of the ultimate strengths. An important comparison between rolled and framed girders, and its results, leaves us perplexed with the remembrance that while all new Paris is built with rolled girders and joists, the few iron floors and horizontal iron supports in London are of framed or riveted iron. Yet Mr. Clark says (page 657):—"Compared with solid rolled joists, the strength of riveted joists is less, and the deflection is greater. . . . It follows, from experimental tests (page 660) that the strength of solid-rolled joists is to that of riveted joists, of equal weights, as 1½ to 1, and that these deflections, under equal loads, are as 1 to 1½." We call the special attention of our readers to the above statement.

The imperial weights and measures of this country are examined and compared. The introduction to this part of the book may be new to many people:—

> "The origin of English measures is the grain of corn. Thirty-two grains of wheat, dried and gathered from the middle of the ear, weighed what was called one pennyweight; twenty pennyweights were called one ounce; and twenty ounces one pound. Subsequently the pennyweight was divided into twenty-four grains. Troy weight was afterwards introduced by William the Conqueror, from Troyes, in France: but it gave dissatisfaction, as the troy pound did not weigh so much as the pound then in use; consequently a mean weight was established making sixteen ounces equal to one pound, and called avoirdupois (*avoir du poids*).
>
> "Three grains of barleycorn well dried placed end to end made an inch the basis of length. The length of the arm of King Henry I. was made the length of the *ulna* or ell, which answers to the modern yard. The imperial standard yard is a solid square bar of gun-metal kept in the office of the Exchequer at Westminster, 38 in. length, 1 in. square, at the temperature 62 Fahr. Two cylindrical holes are drilled half through the bar, one near each end, and the centres of these holes are 36 in., or 3 ft. apart,—the length of the imperial standard yard."

There is also in the Standard Department at Westminster, so says Mr. Clark, a newly-constructed subdivided standard yard, laid down upon a bar of Baily's metal, upon which a subdivided metre has also been laid down. The metrical standards are the metre (the unit of length), and the kilogramme (the unit of weight). In Paris these platinum standards are deposited in the Palais des Archives.

Certain items of information, given in the manual, are important as evidence of the slow progress of what one would suppose, in a time of extended international relations, to be inevitable. It appears that the French metrical system has been adopted, and its use made compulsory, by the following States:—France and Belgium, in 1801; Holland, in 1819; Greece, in 1836; Italy and Spain, in 1859; Portugal, in 1860-68; the German Empire, in 1872; Colombia, Venezuela, in 1872; Ecuador, Brazil, Peru, and Chili, in 1860; also by the Argentine Confederation and Uruguay. On the 20th May, 1875, the international convention for the adoption of the French metrical system of weights and measures was signed at Paris by the plenipotentiaries of France, Austria, Germany, Italy, Russia, Spain, Portugal, Turkey, Switzerland, Belgium, Sweden, Denmark, the United States, the Argentine Republic, Peru and Brazil.

At pages 151-2, Mr. Clark has printed tables of equivalent values of inches and millimetres. Tables No. 38 give millimetres = inches, inches decimally = millimetres, and inches in fractions = millimetres. By means of these tables, the equivalent values of inches in centimetres and decimetres, and even in metres, may be found by simply altering the position of the decimal point. Take, for example, the tabular value of one millimetre and shift the decimal successively by one digit towards the right-hand side; the values of a centimetre, a decimetre, and a metre are thereby expressed in inches as follows:—

1 millimetre	0·0394	inches
1 centimetre	0·394	,,
1 decimetre	3·94	,,
1 metre	39·4	,,

Similarly, for example:—

0·32 inch	=	8·13	millimetres
3·2 ,,	=	81·3	,,
32·0 ,,	=	813·0	,,

There are two square measures, or measures of surface, which frequently puzzle Englishmen engaged in the examination of French surveys and plans of estates,—the Are and the Hectare. The former equals 100 square metres; the latter, 10,000 square metres. The hectare is more than double the English acre; it contains more than 2½ acres. Thus:—

1 acre	=	4,840 square yards
1 hectare	=	11,960 square yards or 2 acres 2,280 square yards

Under the head of fundamental mechanical principles, Mr. Clark has compiled a chapter of elementary engineering science, with a mass of formulas valuable, not only as references, but as texts and tasks for students. His definition

* A Manual of Rules, Tables, and Data for Mechanical Engineers. By Daniel Kinnear Clark, M.I.C.E. Illustrated with numerous diagrams. Blackie & Son: London, Glasgow, and Edinburgh.

of "Work" is "the sustained exertion of pressure through space." The English unit of work is one foot-pound, and a foot-pound means a pressure of one pound exerted through a a space of one foot. In like manner, the French unit of work is one kilogrammetre, which means a pressure of one kilogramme exerted through a space of one metre. In the approximate equivalents of French and English compound units of measurement, it is given (page 157) thus,—

1 kilogramme per metre...	·672 pound per foot. 2·016 pounds per yard.
1 pound per foot	1·488 kilogrammes per metre.
1 pound per yard	·496 kilogramme per metre.

Again:—

1 kilogram-metre ($k+m$)	7·233 foot-pounds.
1 foot-pound.....	·138 kilogrammetre.

According to Mr. Smeaton, the power of an ordinary labourer is equivalent generally to work done at the rate of 3,762 foot-pounds per minute. Mr. John Walker found that the average force exerted by an ordinary labourer in working daily at a winch, or a crane handle, is equivalent to 3,080 foot-pounds per minute; but Mr. Glynn says 3,300 foot-pounds per minute. It appears, however, that the average net daily work of an ordinary labourer at a pump, a winch, or a crane, may be taken at 3,300 foot-pounds per minute. A French estimate of the work of a labourer in France, turning a crank, is equivalent to 2,604 foot-pounds per minute, for eight hours a day, above ground, or six hours a day in a mine. To compare the labour of men and the labour of horses, according to one estimate a dray-horse can do work, for eight hours a day, equivalent to 33,000 foot-pounds per minute; but Tredgold's estimate for the same, under the same conditions, is 27,000 foot-pounds. Mr. Clark infers that the maximum work done by an average horse per day of eight hours, is at the rate of 25,000 foot-pounds per minute. He adds, from the results of trials at Bedford, that the average work of a horse is there seen to be 20,000 foot-pounds per minute. The term "horse-power" is a measure of the rate at which work is performed; and one horse-power is the expression of 33,000 foot-pounds of work done per minute, or 550 foot-pounds of work done per second.

We have simply strung together a few notes which we made while examining parts of Mr. Clark's excellent "Manual of Rules, Tables, and Data for Mechanical Engineers," and do not pretend to have reviewed it. To us it will remain an eminently useful book of reference.

CONSTITUTION OF THE INSTITUTION OF CIVIL ENGINEERS.

THE annual report of the Council of the Institution of Civil Engineers includes a recommendation to modify the constitution of the society. In the report for 1876 a scheme was proposed, having the aim of establishing a new class of subscribers, intermediate between the present grades of members and associates. The object of the distinction was to distinguish between such supporters of the institution as are actually engaged in the practice of the profession and those not so engaged. Many young professional men, not yet qualified under existing rules, to rank as members, are yet discontented with the name Associate,—a word which also covers those who are not necessarily engineers. At a meeting held in April last, to consider the recommendation of the Council, the project fell through; the resolution being passed "that in the opinion of this meeting it is not desirable at present to create any new class of members."

In the opinion of the outgoing Council the question of the separation of the professional from the non-professional Associates is one that will prove a constant source of embarrassment until it is satisfactorily solved. In the report for the past year, 1877, it is therefore suggested that in future the Institution shall consist of four classes; namely, senior members or fellows, members, associates, and honorary members, with an attached class of students. This suggestion met the approval of the annual meeting so far that a resolution was passed to the effect that the incoming Council be requested to prepare, for the consideration of a special general meeting of members and associates, such alterations in the bye-laws as the suggestions contained in the report with reference to classification may require. It is to be hoped that the intended improvement will not again be defeated by that strong prejudice against organisation which is so unfortunate a feature of the English character. No class of men in England suffers so much from want of organisation as do engineers. This fact may be shown either by regarding on the one hand the numbers of the profession, and on the other hand the total absence of any systematic general accord on the main principles of the chief engineering questions of the day; or, on the other hand, by comparing the *status* of the civil engineer either with that of the Royal Engineer in this country,—or with that of the organised corps of civil engineers in France or Italy.

The important influence which might be exerted by the profession of civil engineers, if any kind of efficient organisation were adopted, may be estimated from the facts contained in the annual report. There are now on the books of the Institution, 16 honorary members, 925 members, and 1,670 Associates, making 2,611 in all. The funded property of the Institution is now 38,773*l.* The total income for 1877 was 12,832*l.*; and the respectable sum of 5,178*l.* was spent during the past year in publication of the minutes of proceedings. The value of these published papers of the Institution is very great, and it would be well if their contents were more generally known,—not in the profession only, but to the public at large. A list of fifty subjects is now put forth, on which original communications are requested for the ensuing year. These subjects range from the principles and details of geodesic survey, to the naval or military item of "Torpedoes, and their Influence on Naval Construction." It will be observed with some surprise, considering the serious question now rising as to the non-remunerative nature of the mineral traffic on the railways both of this country and of the United States, that the Council of the Institution have omitted to call attention to an investigation to which the great founders of the profession would have bent their most earnest attention. The omission of any reference to the no less vital point of the disposal of sewage is probably due to the fact that several communications on the subject were discussed last session, without any definite result being attained. The cordial thanks of the Institution were deservedly tendered to Mr. James Forrest, the indefatigable secretary, for his long and valued services. The conclusion of the report is to the effect that the Institution is financially in a sound condition, but that at the same time the income proper is barely sufficient to balance the heavy expenditure entailed by carrying out the objects of the society on the liberal scale actually adopted. The Institution has our hearty good wishes; but we still object to their habit of preventing the public from knowing what is said and done at their ordinary meetings.

ON THE NEW METROPOLITAN MARKETS.*

AT present there are throughout the metropolis some forty or fifty places, at least, that are more or less known and frequented as markets for the sale of provisions, some consisting only of a few stalls or stands, and even those stalls or stands movable; others rising to a sufficient dignity to be brought before your notice on this occasion. Of these some are wholesale as well as retail,—*i.e.*, that is supplying both the dealer or retailer and the consumer. One or two alone have the greatest portion of the trade devoted to the wholesale; and in one special instance, indeed, may properly be considered not only as a metropolitan market, but an imperial one. It is impossible, in considering the subject before us, to ignore entirely the importance and peculiarities of the market-places and market-houses of the provinces, as well as of the Continent, though time will only permit a passing allusion to them. Not a bad type of the provincial market-house of some century or century and a half ago may now be seen within a few yards of Oxford-street, built when that part of the present metropolis was quite an outlying district,—connected, it is true, by Oxford-road, but disjoined from the city of London by pleasant Bloomsbury fields and lanes, the village of St. Giles being a sort of halfway resting-place; probably at that time the abode of a rural innocence long since departed. Of the various others, of course, first comes Covent-garden, famous throughout the world for its fruit, flowers, and vegetables. The name of this well-known place is one of the many instances of popular corruption of phrase. We are told that there was, as early as the thirteenth century, a large piece of ground known as the Convent Garden, belonging to Westminster Abbey. "In 1560 it consisted of an oblong walled space, sprinkled over with trees and some three or four cottages. In 1827 the Duke of Bedford obtained an Act for rebuilding the market, and the irregular sheds and standings began to be removed in 1828." The present buildings were designed by, and erected under the superintendence of, the late Mr. Fowler (a vice-president, and one of the founders of this Institute, and father of our esteemed coadjutor, Mr. Charles Fowler), and consists of a centre arcade, with two side rows of shops, intersected in the centre by another arcade at right angles, the whole being completed at the expense of John sixth Duke of Bedford. The market has since extended itself, and overflows into the adjoining streets, besides which a large new wholesale flower-market has been added, and I fancy the entire area used for market purposes may be roughly estimated as between four and five acres, or at least three times its original size. The Borough, Spitalfields, and Farringdon, all of them, like Covent-garden, are devoted to fruits, flowers, and vegetables.

Again, certain of the railways have made a sort of market of their own at their termini: as, for instance, the Great Northern, which has, I believe, at King's-cross, one of the largest potato markets in London. The market that at one time, in old London, was the largest and most frequented has long since vanished, viz. the Stocks market, and on part of its site now stands the Mansion House.

Islington Cattle Market is situate nearly a mile from King's-cross, up Maiden-lane (one of the oldest thoroughfares out of London), where stood Copenhagen House, said to have derived its name from the circumstance of a Danish prince having resided here during the great plague. This property and the surrounding fields, to the extent of nearly 100 acres, were purchased by the Corporation, who erected on it the Metropolitan Cattle Market, to supply the place of Smithfield. The market-place is a quadrangle, with a lofty clock-tower in the centre, and at each of the four corners a tavern, the open area being set off into divisions for the different kinds of live stock, and nearly half a million of money has been expended on the buildings and land.

The Foreign Cattle Market at Deptford is on the site of the Royal Dockyard, which first gave consequence to Deptford, and gradually increased its population and importance as a maritime vicinage to London. The dockyard was bought by the Corporation, at a cost of nearly 100,000*l.*, for the formation of a market for foreign cattle. The slips where the ships had been built were filled up and paved, and supplied with divisions and pens, &c., and various other alterations made, and it was opened for use on the 28th of December, 1871. The area of the market is about twenty-two acres.

There remain four more markets lately erected, or in course of erection, by the Corporation of the City of London, viz., the Metropolitan Meat Market, the Poultry and Provision Market, and the intended Vegetable Market at Smithfield, of which latter the foundations are now being executed on the adjoining land; all of these are in the ward of Farringdon Without, and the Fish Market, well known as Billingsgate, in the ward of Billingsgate. These four markets, in addition to the two live-markets before mentioned, have absorbed and will absorb an amount of money to be reckoned by millions. The most prominent and best known of the latter four is the market first erected and called the Metropolitan Meat Market, to the details of which, with a few preliminary remarks, I now desire to ask your attention.

Smithfield, the site of the Metropolitan Meat and Poultry Market, appears to have been originally an open space, of considerable but somewhat undefined extent. The name signifies a smooth plain, "smith" being a corruption of the Saxon word "smeth" (smooth). The uses to which in ancient times it was applied were extremely various.

In 1847 it contained just six acres. About this time public opinion had been loudly expressed as to the nuisance of the market and

* From a paper by Mr. Horace Jones, Fellow, read at the Institute of British Architects, as elsewhere mentioned.

the driving of cattle through the streets. The sanitary opinions of the day began to make themselves heard, declaring that the existence of a large live-cattle market, with its concomitant evils and nests of slaughter-houses and other similar trades in the centre of a city, was objectionable in the extreme; and in 1852 the Corporation obtained an Act of Parliament for the removal of the "Live-Cattle Market" to a more convenient and spacious site in Copenhagen Fields. This new market at Islington, constructed by the Corporation, from the design and under the superintendence of my predecessor, the late Mr. J. B. Bunning, the architect to the Corporation, was opened by the late Prince Consort on the 13th of June, 1855, under the name of the "Metropolitan Cattle Market."

Consideration was then given to the question of the appropriation of the site of Smithfield, thus left vacant. It was determined to build thereon a market for the sale of meat and poultry, the lower part or basement of which should form a railway depôt for goods, more especially meat or goods brought to the market above. For carrying out this purpose, an Act of Parliament was obtained in 1860, and under its powers the present building has been erected. Another Act was obtained in 1861 for dismarketing Newgate Market, which had been established by Act of Parliament in 1670, in place of the shambles which had previously occupied Newgate-street. The date of the ceremony of opening the New Market was, by Act of Parliament of 1861, declared to be the period of the closing of the old one in Newgate-street. Under the powers of certain Acts, the Corporation were authorised to raise large sums of money for the purchase of property, demolishing numbers of houses and other tenements, &c. The various railways, — viz., the Metropolitan, and the London, Chatham, and Dover especially,—had not been idle, and from the confused mass of streets, alleys, &c., were the wide streets and larger spaces and sites of the new markets educed. The Corporation were further authorised to raise the sum of 200,000*l.* for the erection of the market building. The Act also fixed the rental at 1d. a foot superficial per week for each shop; also a toll of ¼d. on every 21 lb. of meat, &c., brought into the market, with powers, under certain conditions, to raise the toll to ½d. on every 14 lb.

The carrying out of the work of the Metropolitan Meat Market was confided by the Corporation to the Markets Improvement Committee, who having purchased and cleared the property, set about obtaining designs for the proposed work; and after much time and labour and hearing and seeing various opinions and schemes, &c., finally instructed me to prepare a design, which was approved of by them and submitted to and adopted by the Court of Common Council in 1866. The site is a parallelogram 631 ft. long from west to east, and 246 ft. from north to south. Dictated by circumstances and arrangements made in Parliament with surrounding owners and various vested, or supposed to be vested, interests, a centre public roadway between 50 ft. and 60 ft. wide cuts the building into two halves. It must be borne in mind that the basement of this building is a railway station. Though at present used only for goods, yet the accommodation of staircases is provided (as it was intended to accommodate passenger traffic to and from the market) as well as lifts for the speedy delivery of goods from the railway trucks into the market. The only carriage approach to the goods station is the circular road on the south side, lying, in fact, between the Meat Market and St. Bartholomew's Hospital. The inner circular area, about one-third of an acre in extent, has been laid out and planted as a garden and pleasure-grounds at the expense of the Corporation, who have also erected a handsome fountain designed by Mr. Butler, on whom it reflects much credit. A reference to the plan of the basement shows that the supports of the floor of the market are irregularly placed to suit the direction of the railway rails, and, of course, from the circumstance of their irregularity, occasioned some extra consideration as to the arrangement of the upper supports which carry the roof above the ground-floor. These columns were originally intended to be executed in cast-iron, and, indeed, two at the north-west corner were so executed by the railway company when they first ran their line of rails through the northern side of this basement, and more than a year before any designs for the market were made, and after which period the change of the construction from cast-iron columns to wrought-iron stancheons was made. The construction of this basement was the joint work of the Corporation and the two railway companies, viz., the Metropolitan and the Great Western, the design being the joint production of Mr. John Fowler, the engineer to the railway companies, and myself, its execution being carried out under our joint superintendence. The construction of this basement (of nearly four acres) with its retaining walls, supports, and ceiling or floor of market, was no small work in expense. It is a series of nearly regularly placed principal girders about 240 ft. long running from north to south, and having an average but very irregular bearing of a little more than 30 ft. each, with the supports or stancheons as before stated placed so as to meet the necessities of the railway curves, &c. These carry numerous transverse girders running from east to west, 7 ft. 6 in. apart, from which brick arches are turned. Roughly there are about five miles length of girders supported on one hundred and eighty stancheons, and altogether about three thousand tons of wrought-iron.

About one-third of the area of the intended market was ready about the beginning of May, 1867, and by that time the work of the market proper was commenced, covering an area of 155,226 ft. Certain postulates were arrived at: Imprimis—the market was to be an enclosed market, so that full command could be held as to the entrance to and exit from it, and as to the hours of opening and closing, &c., so as to secure the receipt of toll, examination of provisions or material sold, and other fit and proper supervision. Secondly,—ample space in avenues and ready access to the surrounding streets.

After various diagrams had been prepared and submitted to, and discussed by the Committee and the meat trade (wholesale butchers and salesmen), who met regularly, and in fact were formed into a powerful and compact body or guild, with secretary and other officers, and brought their views and supported them very strongly and effectively before the committee, the working drawings (exhibited on the walls) were adopted. These show that the design consists of a number of equal parallelograms, formed firstly by dividing the whole area in half by the central roadway, and secondly by forming the central avenue, which is 25 ft. wide from west to east, giving four equal parts or quarters, each quarter having three avenues 74 ft. long and 18 ft. wide. Each of these minor blocks contains fourteen shops, about 36 ft. deep, with a width of 15 ft.,—the total number of shops being 162. These blocks of shops, formed partly by this central roadway, which was determined on in Parliament, so as not to lessen the means of access from the north of Clerkenwell to the City through Little Britain and King Edward-street, &c., and again by the central avenue running from east to west, and finally by the smaller avenues from north to south, form a disposition open to criticism, as it will be seen that certain shops not only are corner shops, but situated in and fronting the leading avenue, and usually supposed to be more desired and desirable than those in the side avenues, thus not keeping all the tenants on the same footing. With regard to this especial point, to which I shall again refer, especially when I come to the Poultry Market, I must here remind you that prominence of position is of less consequence where the trade is nearly or entirely wholesale (as it is in this market), than equality in size and internal convenience, for the purpose of conducting the trade; and these points are of more importance than show-room or publicity.

Having reference to a railway station below, with irregular supports to the floor of the market, controlled, as before mentioned, by the curves of the railway, and it being necessary to keep all the avenues clear of all columns, of course the first problem to solve was the contrivance of the roof, its support on and the disposition of the columns on the ground-floor, so as to obtain their proper bearing on the stancheons in basement. And here again came in more postulates. The roof of a market must, or rather ought to be, light, airy, and cool in summer, and whilst admitting light and air, it must keep out wet and cold in the winter. I have seen many markets, not only designs but actual buildings, covered with glass transmitting direct rays, more like cucumber-frames, or say crystal palaces, than the cool, shady, but airy retreat in hot weather that a market should be; and again others built or designed with shed roofs, apparently for the purpose of shutting out all the light, and admitting, through large unprotected openings, wind, snow, and sleet, which on a winter morning must be trying to salesmen and frequenters of the market. Nearly, in fact, the same principle has been employed in the roofs throughout, and I do not know that I could more correctly name it than by calling it an adaptation of the mansard principle with certain alterations suggested by circumstances and by the difference of the situations and the various spans of the different roofs.

Having exhausted your patience with the roof, I must ask you to turn your attention to the detail of the shops. As you may perceive, they average about 36 ft. by 15 ft., consisting, on ground-floor, of shop or selling-space, counting-house, with scale-room or beam, and small staircase to upper floor. This upper floor contains a small room, in no case for sleeping, but for retirement, meals, &c., averaging about 180 superficial feet, lavatory, and W.C. The height of the story being fixed at about 13 ft. from floor to ceiling, some economy in space was gained, especially on the ground-floor, by constructing an interlacing stair, by which the inhabitants of two shops would be enabled to ascend to the upper floors in the space occupied usually by 1½ stairs, or ¾ each, a saving in fact of 25 per cent. on each staircase. This arrangement saves on each floor at least 18 ft., or by the mode of charging rent, gives an advantage of 18 ft. at 2d. per foot (1d. on each floor) per week 3s. or 7*l.* 6s. per annum on each shop,—or say, upon the 162 shops, 1,182*l.* 12s., a nice little sum at twenty years' purchase Of course there are many details which, in a brief notice of this description, must be omitted, though they necessarily involved special consideration: for instance, not only the provision for carrying away the water of roofs, but also of the closets, lavatories, &c., the thickness of the floor between station and market being limited, and the level or floor of station being considerably below the general level of the surrounding sewers.

The style of architecture adopted for the market building is that generally understood by the term Italian, but of a type more nearly allied to the Renaissance architecture of France than the more severe Palladian school. The prevailing feature is a series of arcaded recesses between Doric pilasters, fluted on the upper two-thirds, and elevated on pedestals. The entablature is returned and ornamented over the pilasters, and finished with ornamental vase-like terminations, which, recurring at regular spaces through the length of the building, give an effective sky-line. The general height of the external wall is 32 ft. Between the Portland stone pilasters the recess is built in red brickwork, which, by its contrast of colour, gives point to the architectural effect, and adds greatly to the appearance of the whole. The semicircular head of the arcade is filled in with iron scroll-work, so designed as to occupy the space, and yet leave room for air and light to pass freely through, there being no glass behind. The keystones of the arches are carved, those over the twelve side entrances being carved into heads, the others into shields. The windows under these openings have stone sills and trusses, architraves, and cornices, and are also filled in with ironwork, but of a less ornamental character than that in the arched head above.

The chief points of architectural effect are the four towers, the frontispieces, or façades of the public roadway which passes through the market from north to south, and the pedimented gateways to the east and west fronts.

Some facts as to quantity of provisions supplied to the market may be interesting. Nearly 190,000 tons of meat were supplied last year; enough, indeed, to afford 4½ ounces of meat daily to four millions of mouths. No doubt a large quantity of this goes far beyond the metropolis, and at times to centres of population in the north, the midland, and the south,—making this market as a provision and meat market, not merely a metropolitan market, but really and truly an Imperial market,—fixing and defining the prices of meat from Aberdeen to Cornwall. It may also be interesting to learn that the receipts, as shown by the published reports, are between 50,000*l.* and 60,000*l.*, and, after allowing duly for repairs, collection, and every expense, there remains a large balance for interest of money and extinction of debt, and remuneration for capital invested.

What the present rate of loss in rental is I am not prepared to say, but I recollect for some five years the average loss of rent was between

10s. and 12s. per annum on the 50,000*l.* per annum.

The western approach street (from Farringdon-road to the north side of the market) required by the original Act, but constructed under the powers of a separate Act of Parliament, was an important work, and involved much labour in excavating for and forming a sewer and vaults under the Metropolitan Railway. A bridge over the railway also had to be constructed, the work to which was only performed during two or three hours in each night, or rather early morning (from one to four o'clock), to avoid the risk of accidents to passing trains, as the traffic of the railway was uninterrupted. The work was completed and opened in 1867.

Soon after the opening of the Meat Market in November, 1868, it was found that the requirements of the trade completely exhausted the space at the command of the committee to whom was intrusted this market, and they determined to recommend the proposition to remove the poultry trade, which at first occupied the eastern end, erecting for the poultry and provision trade a new market, and accommodating the butchers and salesmen (otherwise the meat trade) with the entirety of this market lately (in 1868) opened. In 1872, the Market Improvement Committee presented a report to the Common Council recommending the construction of

THE NEW LONDON CENTRAL POULTRY AND PROVISION MARKET, SMITHFIELD.

The new building in design and treatment is similar in its general features to the adjoining meat market. This was rendered necessary, not only by its being used for a cognate purpose, but also by its close proximity to the present structure, with which it was necessary that it should harmonise in appearance as well as in purpose. The Doric in both buildings is the governing order, but, instead of the series of arcaded recesses, the bays or compartments between the large pilasters are divided into two stories by a sub-order of more delicate design, over which in each case is an oval window, affording light and ventilation to the rooms above the shops.

The chief points of architectural effect in the external design are the four pavilions at the corners of the building,—the centre or clock towers on the north and south fronts, and the east and west entrance gateways. The four pavilions mark the extent of the façade, and were originally designed to contrast with those of the Meat Market, and it was only at the strongly expressed wish of the committee that they were re-designed to be more in accordance with the adjoining building, and the drawings of them speak for themselves. The clock towers which mark the centres of the northern and southern façades, where are double entrances to be referred to directly, are carried up above the general line of cornice with pilasters, and a pedimented cornice on each elevation, the space between the pilasters being occupied by a clock surrounded by a carved stone setting, of an ornate character, representing the supporters of the arms of the Butchers' and Poulterers' Companies. The entrance gateways at the east and west have also seen altered from my design to be only mere copies of those of the Meat Market, although the portals are filled in with ornamental cast-iron work of a different design.

BILLINGSGATE.

The rapid growth of London, the importance of the trade in this valuable article of food, and the desire of benefiting, not only salesmen and fishmongers, and carriers both by sea and land, but also the public at large, induced the Corporation of London, about five or six years ago, to apply to Parliament and obtain powers to rebuild on a larger scale this market, the Act for which was granted in 1872.

The total area of the new market on the level of Thames-street is 39,000 ft. against 20,000 ft. of the former market. From the peculiarities and nature of the site, being the bed of the estuary or creek before alluded to, it has been necessary to excavate the soil, a mingled mass of piling, river mud, cesspools, and refuse of all kinds, to a depth varying from 25 ft. to 50 ft. below the level of Thames-street. Warned by the lamentable fate which befel the adjoining public buildings some fifty years ago, sound and completely substantial foundations were executed, and the Corporation availed themselves of the increased depth of excavation to construct a lofty, airy, and fairly lighted basement, about 24 ft. high, which will also be available not only for a shell-fish market, but applicable for other market purposes, should overcrowding on the level of Thames-street render it necessary or desirable.

The accommodation provided is as follows:—The basement has an area of about 20,000 superficial feet. It has a groined, vaulted, and domed roof, supported on piers 24 ft. in height; large circular apertures, partly glazed and partly open, are formed in this roof for light and ventilation. This basement is approached on the north side (Thames-street), and south side (the river quay), by wide and commodious staircases, with a lift about 10 ft. 6 in. by 4 ft. 9 in. to each staircase. There are also double floors for the river-side taverns, and for the fourteen shops or warehouses on the east and west sides of the markets; the portion under the arcade, next Thames-street, is devoted to engines, boilers, steam-generators, for pumping, working lifts, supplying hot water, boiling shell-fish, &c.

The whole area of the market is just about 39,000 ft.; the interior area, exclusive of shops, taverns, and arcade, is covered with roofs on the louvre glass principle, carried on lattice girders of 60 ft. span, affording ample light and ventilation to the general market. The height from floor to roof is 31 ft. 6 in. at the plate, and 43 ft. at the ridge; and the area, with arcades, about 25,000 ft.

The gallery called the Haddock Market is 30 ft. in width, running from north to south above the general market. It is approached from the staircase halls, which serve for access to the basement and ground floors, and has an area of some 4,000 ft.; and, as its name implies, is a market for the sale of haddocks and other dried fish, a considerable traffic in which article is carried on at this market. The lighting and ventilating this part of the building is similar in every way to that of the general market, and somewhat similar to the principle adopted in the markets at Smithfield.

The heavy goods, barrels, &c., for the upper and lower floors of this building will be conveyed from the ground-floor by means of the hydraulic lifts, which will be fitted up near Thames-street, to take the land traffic, and next the river to accommodate goods brought by water. Boiling-places, supply of steam, &c., are, as before alluded to, provided for cooking lobsters, crabs, and other shell-fish of their different kinds, so that the entire fish business will find its centre in the new market.

The design of the building is Italian in character, and the materials used in its construction are Portland stone, with polished grey granite plinths and wall linings, the intervals between the archivolts and windows are filled in with yellow brick facings. The front next Thames-street consists of an arcade, terminated at its eastern and western extremities by pavilion buildings, and a pedimented central feature, marking the entrance to the shell-fish and dried-fish markets. The river-front is similar in general treatment, but differing in detail, and includes two large taverns, situated at its south-east and south-west extremities, on the upper rooms of which, no doubt, will be continued the fish-dinners which have been so long a part of Billingsgate life. The revenue of this market has, I am pleased to say, increased since its extension, so as to fully justify all that has been expended on it.*

A NEW LUNATIC ASYLUM FOR SURREY.

AT a meeting of the Surrey magistrates on the 1st inst., the committee appointed to provide an additional lunatic asylum said they had selected a site situated on the Reigate road, near Stoat's Nest Goods Station, on the London and Brighton Railway. It consisted of fourteen acres, and the cost would be 23,000*l.* The Committee recommended the Court to empower the Finance Committee to raise a sum of 5,000*l.* by debenture bonds for the purchase of the land, &c.

Sir Francis Scott said he was astonished at the sum proposed to be paid for the land, being at the rate of 165 years' purchase, and according to the estimate of the agent for the vendor, 15s. or 1*l.* per acre, 222 years.

Mr. Somes remarked that the subject had been thoroughly thrashed out, and the Court had decided to construct an additional asylum.

The report was agreed to.

* Illustrations of most of the buildings named will be found in our volumes.

THE POSITION OF THE MASONS' STRIKE.

WE regret that we cannot announce the termination of this disastrous dispute. From 600 to 650 men are on the strike roll, the single men receiving 18s. a week, the married a little more, according to the number of children. On the part of the employers it is asserted that they have not room in their shops at this moment for more than 300 men, and that in a very short time they would be unable to take back any of their old hands, even should they manifest willingness to return. They are about to make contracts for six months with more German masons. They profess perfect satisfaction with the work of the foreigners already employed by them. The English masons on their side profess to disbelieve much of this statement, pointing to the large amount of work that is waiting for execution as being sufficient to employ all who are now out as well as the foreigners who are already engaged, for whose rivalry as workmen they have no fear.

An earnest endeavour is being made from without to induce both sides to refer the points in dispute to the decision of one unprejudiced and competent person in whom both could place confidence, but what the result of the endeavour may be we cannot yet say. We earnestly exhort those who have influence to use it to bring about an immediate termination of this wasteful dispute. All must view with dislike this importation of foreign artificers. We cannot blame the masters for resorting to it, but it ought to be stopped as soon as possible. To extend it by bringing over, as some have proposed, hordes of half-civilised Japanese artisans would be a national misfortune. The actual difference between the associated masters and the men looks but small when the two statements are brought into juxtaposition. The secretary of the strike committee has said, in our pages, "We do not demand the same rate of pay" (the 10d., that is) "for all"; while those who represent the masters have said to us, "We are quite willing to give more than 9d. to good men." Surely it ought not to be difficult to bring about an amicable arrangement on such a basis as this, and to put an end to the present state of things, which is damaging everybody concerned.

WAREHOUSES, ST. JOHN-STREET, WEST SMITHFIELD.

THESE buildings are erected on a site leased from the Governors of St. Bartholomew's Hospital; one being for Mr. E. R. Parker, and the other for Messrs. Dillamore & Rowley. Mr. Parker's premises are very extensive, occupying an area of about 4,000 superficial feet, and comprise a large basement over nearly all the area, for the storage of provisions.

The front elevation is all of stone,—the portion up to the first-floor being of Portland, and the rest of Bath. The pilasters to the ground story are of polished Shap granite, supplied by Messrs. Fenning & Co. The rest of the premises are faced with Peart's white bricks. The ground-floor is devoted to offices and warehouse purposes, the upper floors in front being used as a manager's residence, whilst in the rear is another warehouse floor.

A cartway at the side leads to a large court-yard, around which are placed bacon stoves, cart-sheds, &c., whilst stabling is formed above these latter, reached by an inclined roadway, and above these are straw and hay lofts. The yard is covered by an iron-and-glass roof, glazed on Rendle's patent system, raised enough from the walls to ensure ventilation.

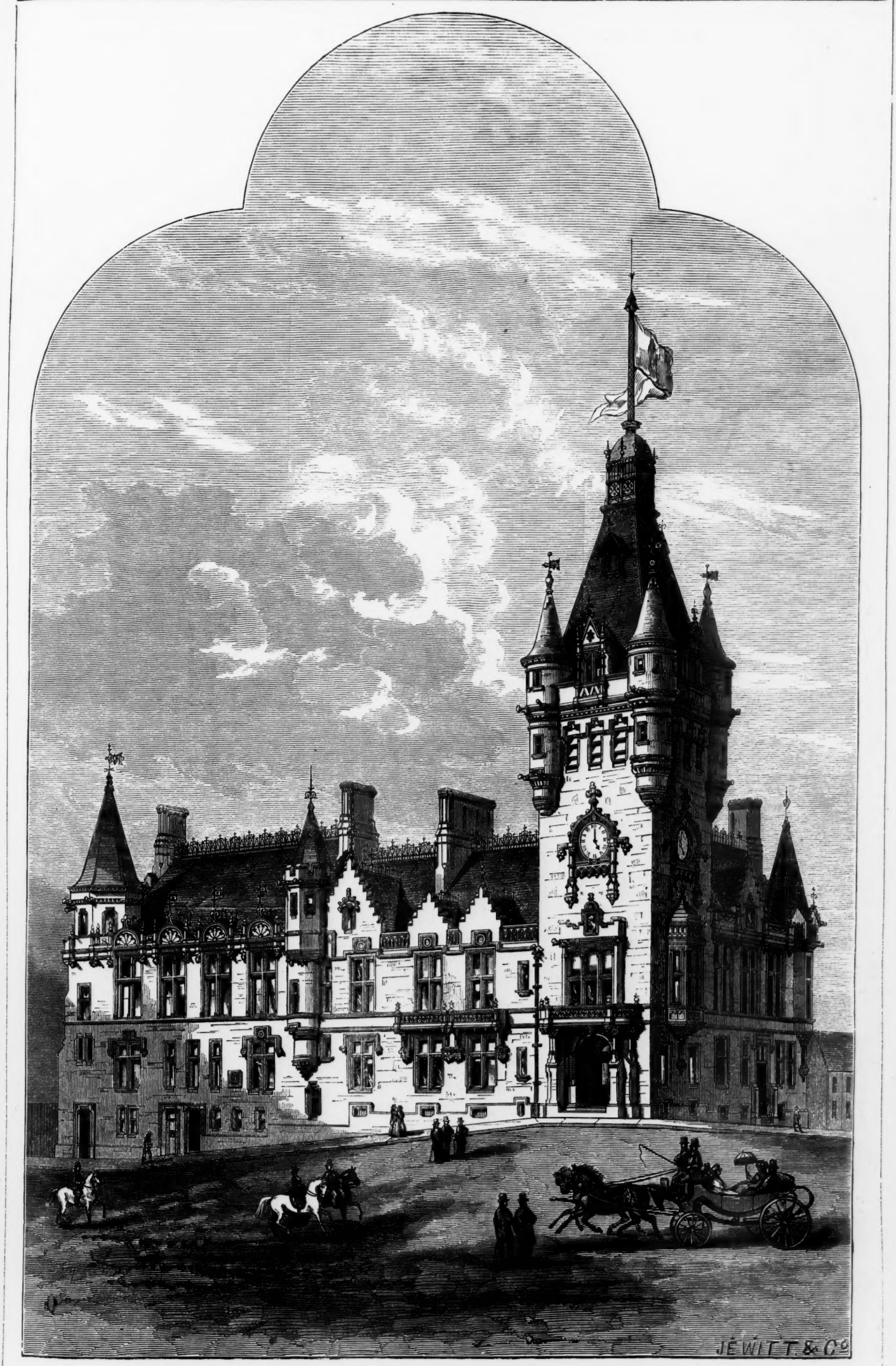
Platten's asphalte is used for the cartway court-yard, basement, and stables. The stable fittings and iron staircases were supplied by Messrs. Macphail & Co., of Thames-street, and the iron girders by Mr. Dawnay, of Queen-street.

Messrs. Dillamore & Rowley's warehouse has a frontage of 20 ft. by 75 ft., and comprises a basement and four other floors. The building is 45 ft. long,—the rest of the ground-floor being roofed with a glass roof, giving light also to the basement below. All the upper floors are well lighted, back and front.

The elevation is of white and yellow bricks, with Bath stone for cornices and capings.

The architect for both buildings is Mr. Charles Bell, of Union-court, Old Broad-street; and the builder Mr. J. Woodward, of Wilson-street. The foreman of the works is Mr. Hill.

WAREHOUSES, ST. JOHN STREET, WEST SMITHFIELD.——MR. CHARLES BELL, ARCHITECT.



NEW CORPORATION BUILDINGS, DUNFERMLINE, SCOTLAND.—MR. J. C. WALKER, ARCHITECT.

THE CORPORATION BUILDINGS, DUNFERMLINE.

LIKE other Corporations, the Corporation of Dunfermline have found it necessary to give up the old inconvenient meeting-place and to provide more fitting premises. Our engraving shows the structure they are putting up. In the course of the year 1875 the Council selected one of two designs which had been submitted by Mr. J. C. Walker, architect, Edinburgh, and accordingly he was requested to prepare working plans for the construction of the building. The design is a combination of old French Baronial and Gothic styles of architecture. Internally it will include the primary requisites of being commodious and suited for the modern requirements of business. The block presents two fronts, one to Bridge-street, and the other to Kirkgate, but the inequality of the ground will detract somewhat from its stately appearance as a whole. It will be two stories and part of a third above the pavement in Bridge-street; and on the east side, as the Kirkgate recedes, there will be three stories above the ground on the south end; the back will present five clear stories to the glen. The length of the east front will be 144 ft., and it will be 42 ft. 6 in. at its broadest part; on the north side, fronting Bridge-street, it will be 64 ft. 6 in. long, and 24 ft. 9 in. wide. On the ground floor in the south division, there will be the housekeeper's apartments and lamplighters' room, and also public closets; above these, on the second or basement floor, there will be a room for the Superintendent of the Burgh Constabulary, a second for the constables, and five police-cells; there will be a dwelling-house of three rooms for the police sergeant; a vacant space on which an apparatus may be erected for heating the building, and there will be several cellars. The same floor in the north division is divided into three rooms suited for an office, and connected with those on the floor overhead. The third or street floor has at the south end a room for the master of works, and behind it another for the collector, which is lighted from the back; next to these are four rooms for the office of the town-clerk, a fire-proof safe and charter room. On the same floor, fronting Bridge-street, there will be a large apartment suitable for the telling-room of a bank, a room for the manager, and another for the clerks. To these there is a separate entrance about midway of the front, and from 3 ft. to 4 ft. above the street, the intention being that this flat, and the rooms below shall be held by the same occupant.

The main entrance, however, to the municipal offices will be under the tower and level with the pavement facing the High-street. Passing through the inner door there will be a hall and an inner lobby leading to the town clerk's rooms, and on the right a staircase communicates with the upper floors. At the south end of the building, nearly opposite Maygate, there is an entrance to a stair conducting to the upper floor, which is designed for the burgh court-room. It is by this entrance the public will obtain access to the court-room, which will be 50 ft. in length and 31 ft. 6 in. wide, and its height from floor to ceiling 27 ft. 3 in. About half way up the street there is another entrance, by which admission may be obtained to the magistrates' room and two waiting-rooms, which are separated from the court by a large corridor. In the north division of the building there will be on the same floor a committee-room, under the tower, 19 ft. 6 in. by 16 ft. 6 in.; next to it is the council-chamber, which will occupy the whole of the remaining space on this floor; it will be 39 ft. 3 in. by 25 ft. 3 in., and the height from the floor to the centre of the roof 26 ft. There will be three windows facing Bridge-street, an oriel window in the north-west corner, and a similar one on the south-west corner of the room. The roof of the chamber, and also that of the burgh-room, will be finished with pitch pine and varnished. On the sides of the principal entrance under the tower there will be small columns of Peterhead granite supporting a balcony. The two windows which light the staircase will have at each side carved corbels, on which rest granite columns supporting balconies similar to that above the doorway. The windows of the burgh court-room will be surmounted with pediments and carved. About the centre of the east front the lines of the long wall are agreeably relieved by a projection indicating the interior staircase: it is carried up to the ridge, and terminates in a turret; there is a corresponding turret at the south-east corner above the entrance to the court. The gables have moulded crow-steps, and the wall-heads are guarded with a low ornamental stone railing. There will be a handsome oriel window on the north side of the committee-room, and a square projecting window on the east side above the principal entrance. The two spaces for the dials of the clock,—one on the north and the other on the east side,—are encircled with mouldings, having crockets surmounted with a finial, and having underneath two gurgoyles. Above the clock-room is the bell-room, and over it the tower-room, from the roof of which the sides of the tower begin to contract to the summit, and this is reached by means of a ladder. There is a narrow space at the top on which a man can get out and plant a flag; the space will be surmounted by an iron railing and weather vane. The corners of the tower where it begins to narrow will be flanked with four circular turrets. The height of the tower walls from the street is 78 ft., and altogether to the summit it is 116 ft.

The buildings are being erected by Messrs. W. & J. Hutchison, masons; and Messrs. H. & J. Philp, joiners. The stone used for the construction of the building is from Polmaise quarry, in the neighbourhood of Stirling. The cost of the building will be upwards of 20,000*l.*

The first stone was laid on the 12th of October, 1876, and the structure is now advancing towards completion.

THE LAW OF EASEMENTS.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AT a meeting of this Institute, held on Monday evening last, Mr. Charles Barry, president, in the chair, the following members were elected, viz.:—Fellow: Mr. Edwin Clare, of Guildford-street; Associates: Mr. C. H. Löhr, of Woburn-place, and Mr. A. E. Warner, of Regent-street; Honorary Associates: Rear-Admiral His Serene Highness Count Gleichen, Prince Victor of Hohenlohe Langenburg; the Right Hon. W. Cowper-Temple, M.P.; the Hon. Charles Gore; the Very Rev. the Dean of St. Paul's; the Rev. Charles B. Scott, D.D.; Lieut.-Col. Lenox-Prendergast; Mr. E. Brainerd Webb, C.E.; Sir John Gilbert, R.A.; and Mr. Solomon A. Hart, R.A.

Among the donations to the library were some drawings of Lord Burlington's, and the bye-laws of the newly-formed Institute of Canadian Architects, which have been modelled on those of the Royal Institute of British Architects.

The discussion then took place on Mr. Locock Webb's paper on the "Law of Easements," the substance of which has already appeared in the *Builder*.*

Professor Hayter Lewis proposed a vote of thanks to Mr. Webb for his valuable and interesting paper, which would be extremely useful to all the members of the Institute,—especially so to all those who carried out works in the City, where, if they attempted to carry a new building at all higher than the one which it displaced, they ran the risk of getting into great difficulties and incurring heavy expenditure. It was a good thing that the new class of members, the Honorary Associates, should have been represented for the first time by so able a paper as Mr. Locock Webb's, and it augured well for future benefits to be derived by the professional members from their new *confrères*. In the case of Palmer and Fletcher, mentioned by Mr. Locock Webb as having been decided in the time of Elizabeth, the law was laid down to the effect that if A built a house on part of his own land, and afterwards sold the house to B, and the land adjoining to C, who obstructed the lights, although the house was a new messuage, yet a person who claimed the land by purchase from the builder could not obstruct the lights any more than the builder himself, who could not derogate from his own grant, seeing that the lights were a necessary and essential part of the house. That case involved a very important point, and one which was not generally known to architects, nor even, as it appeared from a case in which the speaker was concerned some years ago, to the lawyers themselves, who advised the building owner in ignorance or forgetfulness of the case of Palmer *v.* Fletcher, and the consequence was that enormous expense was incurred.

Mr. I'Anson seconded the vote of thanks, and said that Mr. Locock Webb's paper had put very concisely and very neatly several points which practising architects and surveyors had continually to deal with. The paper had put in a very clear and intelligible manner the question of the angle of 45 degrees, which had hitherto been too much of an empiricism. In the multitude of questions which arose between adjoining owners, however, there were several not noticed in the paper, such as were involved, for instance, in the case where you look down an old wall which was materially out of the perpendicular, and rebuilt it vertically. He recollected a case of that kind at the back of a large hall in Threadneedle-street, built by a man named Moxon, who was a rather aggressive gentleman, as builders who built in the City often were. His (Mr. I'Anson's) client was an old lady who was supposed to be equally aggressive. The party-wall on one side of her premises was extremely out of the perpendicular, leaning outwards from her premises, so as to make the upper floors rather larger in area than the lower ones. The wall had to be rebuilt by Mr. Moxon, in connexion with the works he was carrying on adjoining, and being rebuilt vertically, the old lady's carpets were found to be rather too large, showing that her floor area had been diminished. In such a case, where was the tort? He could not give the solution to the question, for it got into the hands of the lawyers, and was, he believed, never settled. But the question arose, why was his client to lose part of the area of her floors because the wall was out of the perpendicular? Another question not noticed in the paper was such as arose under the following circumstances. If you pulled down a house built since the Fire of London, you found the party-wall to be built of very indifferent and sparsely-mortared brickwork, which, when the wooden panelling which lined the wall in the rooms of the house pulled down was removed, freely admitted both water and air to the adjoining house. Had the adjoining owner in such a case obtained, by prescription, the right to be sheltered by his neighbour? He (Mr. I'Anson) had had this question before him several times, and he had always boldly denied the possibility of such a prescriptive right existing, but he was by no means sure that he was right.

Mr. Frederick Ouvry said that as to the doctrine of the angle of 45 degrees, he had found it a very broken reed to lean upon, particularly so in the case of Jackson *v.* The Duke of Newcastle, when the duke was building a large mansion (now occupied by Lord Granville) in Carlton Gardens. Mr. Jackson was the owner of property in Cockspur-street, and he conceived that the new building would interfere with his light. The Master of the Rolls went to see the premises, and decided that whatever the angle might be, Jackson's light and air were interfered with, and granted an injunction. The case was taken before Lord Westbury, on appeal, who also saw the premises, and came to the conclusion that although there was an interference with light and air, there was not sufficient interference to necessitate an injunction, but the plaintiff was awarded 200*l.* damages, of which he probably got nothing, owing to the cost of litigation. With regard to the right to underground water, there was a passage in the paper which said, if "A made a grant of land to B without any exception of the rights of the streams of water in the land, neither A nor any one claiming under him could, it is conceived, lawfully do anything which would have the effect of draining the underground water or diverting any stream from the land, for such an act would operate as a derogation from A's grant." Now he (Mr. Ouvry) quite agreed with that as regarded surface-water and water running underground in a defined channel, but with regard to the water naturally existing and percolating through the soil irregularly, he ventured to think, with all due deference to Mr. Webb, that B had no right whatever to it, except the right of user. Mr. Webb had cited no case in support of his statement, but merely said "it was conceived" it would be so. It did not strike him (Mr. Ouvry) that in such a case there would be any implied covenant on the part of A that B should enjoy the underground water.

Mr. Hiscocks, after remarking upon the difficulty of the questions involved by easements, and upon their prolificness in giving employment to the "gentlemen of the long robe," referred to a case reported in the *Builder* a few weeks back,* in which the plaintiff's garden was overlooked by a window in a neighbouring house.

* Vol. xxxv 1267.

* Vol. xxxv., p. 1182.

Plaintiff put up a hoarding to prevent an easement. Defendant had sawn down the hoarding, and was mulct in damages and costs.

Mr. Jennings said it was not possible in all cases to prevent easements accruing merely by putting up hoardings. He cited a case in which a seven-storied flax-mill, in Westmoreland, was built with windows overlooking his client's land. Now to erect a hoarding of so great a height would have entailed a greater cost than the land was worth. It was very desirable that whenever the law was altered,—and it was very desirable that it should be altered,—there should be no right to light except by grant. There ought to be an absolute grant of light to give a person a right to it.

Mr. Dawson called attention to the cases cited by Mr. Locock Webb, of Clark *v.* Clarke, and Yates *v.* Jack, decided by Lord Cranworth. In the latter case it was held that the owner of ancient lights was entitled, not only to sufficient light for the purposes of his then business, but to all the light which he had enjoyed previously to the interruption sought to be restrained,—a decision which did not seem quite in accord with the words of Lord Justice James in the subsequent case of Kelk *v.* Pearson. As to the angle of 45 degrees, it was greatly to be desired that the height of houses and the width of streets should be rigidly regulated by some such rule, so that a line drawn at an angle of 45 degrees from the basement of one house should clear the top of the opposite house. This would, in most cases, allow of the erection of buildings consisting of ground, first, and second floors, and any stories above might be set back from the line of front, so as not to interfere with the light opposite. Such an arrangement, where practicable, would make our streets lighter and more airy, and would, he conceived, add greatly to their picturesqueness.

Mr. Chatfeild Clarke, in supporting the vote of thanks, said the case of the Prudential Assurance Company *v.* The National Provincial Plate Glass Company, referred to by Mr. Locock Webb, was a very important one, inasmuch as it laid down what was almost a new doctrine, for Mr. Justice Fry said that access of light must not be interfered with. The practical question for the Institute was to consider what could be done to do away with the cruel hardship, great annoyance, and exceeding loss which fell upon property-owners through the constant suits and litigation arising out of the uncertain state of the law on the subject of ancient lights. It was to be hoped that some of the members of the Institute would be able to make practical suggestions for the solution of the problem. He had, in another place, and on a former occasion, thrown out the suggestion that there should be a compulsory reference of such questions, in order to avoid the delays and expense of litigation. It was a pressing practical difficulty which arose at every step in building. It might be wrong to compulsorily take away a man's light, or part thereof, and to seek to compensate him by compelling him to take a certain amount of money as damages; but, on the other hand, the uncertainty, the delay, and the costs of litigation were so great as to afford unscrupulous people many opportunities of extorting money. He knew of certain building speculators in the City of London, who, having within the last few years built large premises which had injured the light on the opposite side of the street, were now able, owing to the unsatisfactory state of the law, to defy the parties whom they had injured to carry their premises any higher than they formerly were. He thought that a clear-headed lawyer, coupled with an experienced architect, would be able to draw up a Bill for definitely settling some of the doubts and perplexities which beset the question.

Professor Kerr explained, by means of a model, his method for mathematically ascertaining the amount of light obstructed, but regretted to say that it was not of much practical use in courts of law, because the courts would not pay any heed to mathematical calculations. The question of materiality of damage was still left to the judgment of the court or of the jury. The conclusion he had come to, after a great deal of experience in cases of light and air, was that there was no practical solution of the subject whatever; that no practical man could tell beforehand what would be the issue of any controversy or litigation; and that no man could determine, with anything like the precision which would suffice to guide an architect in the preparation of his design, what would be the opinion which the court or the jury might form as to materiality of damage. The right to light was a purely statutory one, though it was commonly spoken of as though it were a right arising out of one's own perceptions of the right and wrong of the matter. England was the very paradise of vested interests, or it would not tolerate the present unsatisfactory state of things. In France or America our law of ancient lights would not be tolerated for a moment. Seeing, then, that the law was in such a state of uncertainty, and seeing that the question of materiality of damage in such cases could only be determined by evidence, architects had to a great extent the remedy in their own hands: they should be more chary of coming forward to support claims for damage to light and air, and more disposed to take up defendants' cases. For himself, if a man came to him on behalf of a plaintiff, he never consented to take up the case till he had well investigated its reasonableness; for his experience taught him that in nine cases out of ten claims for damage to light and air were based upon something very different indeed to a sense of having suffered injustice. If architects would, then, do as he suggested, take up defendants' cases with alacrity, and plaintiffs' cases only after considerable hesitation and inquiry, they would not have anything like so much reason to complain of the obstructions which were continually meeting them at every turn. The architect's province was to design and carry out his building, but unfortunately it was left to the lawyers to administer the law; but if his (the Professor's) advice was acted upon, the lawyers would not have so much to do as was now the case.

The vote of thanks having been carried by acclamation,

Mr. Locock Webb, in the course of his reply, said that Professor Hayter Lewis's experience in the case cited by him showed the necessity of consulting not merely lawyers, but *able* lawyers. As to one of the points raised by Mr. I'Anson, he did not know of any case which would support the view that there was any right or easement obtained, by the wall being out of the perpendicular, to the small excess of space which was afforded on one side of such wall. With reference to the case of Jackson *v.* The Duke of Newcastle, mentioned by Mr. Ouvry, if he (Mr. Locock Webb) remembered aright, one of the learned judges had, in a similar case, expressed an opinion differing from that of Lord Westbury. Having replied in detail to the points mooted by Mr. Jennings and Mr. Dawson, Mr. Webb said Mr. Chatfeild Clarke had raised the question whether it would not be possible to devise some means of settling such questions without going to law. Yes, he thought it would be possible, but it was a large question, and whatever suggestions he might have to offer with reference to it must be deferred. Professor Kerr had complained that the courts took no cognisance of mathematical propositions or proofs with regard to obstruction of light, but his complaint had less foundation than he supposed, for whenever he had been a witness opposed to his (Mr. Locock Webb's) case, he had found that a great deal of importance was attached to the evidence given by the Professor. The Professor had advised his professional colleagues to be more ready to take up defendants' cases, and not to take up plaintiffs' cases until they had been well looked into. That was a very wise piece of advice, because a prudent man never rushed into litigation, especially in a light and air case, until he had obtained the very best opinion he could get as to his rights. There were very few cases in which, where care was taken by a man to ascertain his rights,—unless he failed to prove his facts,—he had failed to sustain those rights in a court of law. The Professor's advice was good, also, inasmuch as defendants in light and air cases as a rule wanted all the assistance that could be given them.

The President expressed the hope that Mr. Locock Webb would, on a future occasion, give a further paper on the subject, and that he would amplify his necessarily brief remarks before they were printed in the "Transactions."

Mr. Horace Jones, the City Architect, then read a paper "On the New Metropolitan Markets," of which we give an abstract on another page.

The President, in announcing that the discussion would take place on the 21st inst. (when a paper will also be read by Mr. I'Anson "On the Architecture of Norway"), said that after Mr. Jones's paper, who should say that the line of division between architects and engineers existed? Mr. Jones's new markets were not only creditable as works of architecture, but they had involved constructive problems that would have taxed the ingenuity of an engineer.

"MIDDLE-CLASS HOUSES IN PARIS AND CENTRAL LONDON."

SIR,—I have just received the usual copies given to the author of a paper read before the Institute of Architects, and consequently until now I have remained partly ignorant of what the gentlemen who discussed my paper, some six weeks ago, said upon the subject of "flats" in London and Paris. The speeches, having been revised by the speakers, differ from the report in the *Builder* of November 24th last, and there are two statements in the president's speech calculated to do so much harm to the cause many others besides myself have at heart that I rely upon your kind assistance to refute or explain them. The importance attached by the outside public to what the chief of a fraternity says about the words or action of an individual member is greater, perhaps, than presidents and chairmen are often aware. With the middle-classes business is far too engrossing to permit much expenditure of thought about external matters. They are not concerned with what my Lord Beaconsfield says, but with what the *Times* or the *Daily Telegraph* says of what the premier says; and the Beaconsfield of our profession at the present moment is Mr. Charles Barry,—to my mind one of the best presidents that ever graced the Institute chair.

In p. 63 of the recent Transactions, Mr. Barry is made to say,—

"Mr. White is a revolutionist in every sense of the word; he not only wants to revolutionise the arrangements of our houses, but to entirely alter ourselves in all our wants, habits, and mode of life. He spoke of French thrift as instanced by ready-money payments for articles daily consumed in the house, the purchase of which was to be personally conducted by the mistress of the house. In Paris there are many divisional markets, but in London we cannot entertain the idea of the housewife going to Smithfield to purchase meat or to Billingsgate to buy fish: that would be simply impracticable."

Now, sir, the passage in my paper, to which allusion is made in the above quotation, was printed a fortnight before Mr. Barry's speech was uttered, and it is as follows (p. 26):—

"To provide the two daily meals, the mistress, attended by the cook, or the cook alone, goes to market; hardly more than just sufficient for the day is brought home, and usually the purchase is a ready-money one. Part of the secret of French thrift is concealed in that practice, and in the small space given to the kitchen, repulsive as the latter must be to an English housewife, whose own beef and mutton emerge from a complete set of apartments, presided over by a complete set of domestics."

In using the phrase "goes to market," I concluded that the old household slang would be understood by every one. When I was a child, to go to market was to go to the butcher's, the baker's, and the candlestick-maker's; to go to *a* market was another thing. In Paris, ladies would not, and could not, venture into the Halles; as a rule, the Parisian housewife, or her cook, purchases the daily provisions at the shops near her own residence. A similar custom, by-the-bye, seems to be getting fashionable in London, if I may judge from the numberless carriages which surround the co-operative stores, and the thousands of rich people who "do their marketing" themselves. Again, Mr. Barry has been made to say:—

"I am ready to acknowledge that there is a large section of Londoners to whom these flats would be the greatest boon, and I should be glad to see . . . . . the experiment tried on some scale sufficiently large to test Mr. White's theory. I have no doubt whatever that his skill would be equal to the occasion, but I should like to have the opportunity of witnessing the results; and as he says at the end of his paper he thinks it possible to erect houses for the middle classes in London which, after paying all demands and out-goings, shall yield a return of *ten or twelve per cent.* he will no doubt be able eventually to effect the revolution in our dwellings which he desires, since such a return on our usual system is, at least, difficult."

What my paper said was this:—

"I venture to think that by the utilisation of actual slums, with careful financial management and legislative aid, houses such as I have attempted to describe could be advantageously built, not alone for the middle classes, but for the working classes; and that they would return *eight if not ten per cent.* per annum on the outlay for cost of land, construction, and maintenance. They would possess the additional advantage, which all Englishmen appreciate, of being, not barracks, taverns, or co-operative hotels, but,—purely and simply,—homes."

The president is a practical man—so are we all practical men—and I, though in this matter called a theorist, desire to be thought practical. It is not improbable, when the new streets are cut through Soho and the Seven Dials, that

Mr Barry will be called upon to build blocks of barracks for the working classes on portions of the vacant land. If, before doing so, he will favour me with a plan of the site, I will try to show how, on the Parisian system of arrangement and construction, an annual revenue, not of "ALMOST FIVE" PER CENT. as in the Peabody Buildings, nor of FIVE PER CENT. as in the Victoria Dwellings, but of EIGHT PER CENT., can be obtained, provided no extraordinary obstructions exist around. If I fail, the failure shall be published, and nothing shall be paid me for the trouble; but if I succeed I shall hold myself entitled to receive the biggest remuneration that Mr. Barry's commission and conscience will permit. WILLAM H. WHITE.

P.S.—Since writing this letter, I have thought it well to look over Mr. Darbishire's paper on "Dwellings for the Poor,"—that is to say, the working classes—read on the 13th of December, 1875; and I cannot help thinking that the unique scandal, in Western Europe, of British pauperism is largely encouraged by that so-called philanthropy which induces opulent men and women to build charity-houses for stalwart working people, some of whom can afford to live six months in twelve without doing any work at all. W. H. W.

A CATENARY SPIRE;

OR A MODE OF FORMING OPEN-WORK SPIRES OF CHAINS: A SUGGESTION.

OF all the elements that have entered into the composition or embellishment of a place of worship, from the Tabernacle in the Wilderness to the churches or chapels erecting at this moment, the spire,—emblem and confession of the Christian's hope of immortality, and pointing to his home beyond the tomb,—embodies, perhaps, the happiest and most appropriate conception. It seems to have been known, in some character or another, in very early times, since we find mention in Homer of "fair Ilion's glittering spires." It is the more valuable for its divesting the tower-form of its threatening aspect, and acting as an extinguisher of its warlike associations, unbecoming its place in Christian architecture.

To me, after its heaven-suggesting pointedness, the most beautiful and desirable quality a spire can have is aërial lightness; and I have often thought it a pity that seeds from the numerous beautiful pierced spires on the Continent,—airy fabrics, some of them, which seem the work of enchantresses,—have not been blown across the Channel into English art-soil, and borne fruit amongst us. Pierce a spire, and you become the rival of the fairies, and impart to it a ghostly, ethereal air, than which nothing can be more highly becoming in a structure of its character and office.

The angle-ribs, as the bounding lines, being the most prominent and constantly present features of such a composition—those by which the spire chiefly makes itself visible,—the most essential element, like the ribs in groined vaulting, it has occurred to me that a spire could be more easily constructed of a cluster of chains in the likeness of decorated angle-ribs, than of stone. In the case of the octagonal section, it would be formed of eight guy-chains, supported by a wrought-iron central rod carried up from the tower, and crowned at the top by a cast-iron finial, the latter prepared for the reception of the upper end of the eight chains, thence extended to eight corresponding eyes in a course of masonry at the top of the tower. The eight chains (chains constructively, of angle-rib form) would in their turn be prepared for the reception of three or four tiers or courses of perforated and decorated bands; each tier, of course, consisting of eight similar pieces. The chains could, I think,—consistent with strength and workable flexibility, or without prejudice to constructive propriety,—be made to suit any architectural design, from a simple bead-form to one richly moulded and twined with flowers, leaves, and tendrils.

A spire so constructed would be equal in effect to a completely pierced one of stone,—a nervous, well-relieved, vigorous structure, worthy of association with any composition, Gothic or Classic. Any degree of richness in character might be given to it by the design of the chains, and the number and design of the bands, and the filling-up of the interspaces or panels with a species of tracery in the same light material. Windows or dormers would be inadmissible, but many coigns of vantage might be found for sculptured figures—doves, eagles, &c., while groups of angels might surround the base, or glitter from corbels.

In painting it, I would give it two shades of light-grey, not to imitate stone, but to intensify the light and shade. Or it might be galvanised. Finials and some other prominent and enriched portions might be picked out in gold. Or, instead of painted iron, the whole might be executed in bronze.

The central iron rod, coincident with the axis of the spire, which is the stamen or spinal column of the construction, might be, according to its extent, put up in two or three lengths properly jointed, and secured below by running through a diagonal beam in the tower.

The advantages of this mode of spire-construction, which it is evident is applicable to any scale, from that of a large and lofty spire, made the main feature of the steeple, and dominating the tower, to a small one crowning a lantern, are that while it would be a most easy and inexpensive one, offering strength and durability, it would supply a great desideratum in this country, and yield an endless variety of beautiful examples of elegant fairy-like structures, in which the lace-like, gossamer character was carried to the utmost desirable extent, and beyond anything we could hope to obtain from masonry. In praising the masonic feats of the kind on the Continent, we hear non-professional travellers say that they are stone lace-work, net-work, cobweb. The spire I suggest would have more of the appearance of such airy substances than anything France or Germany exhibits. It would be a cobweb, but a very durable one, and one that, if carefully put together, the besom of destruction itself, or at least, the fiercest hurricane that could arise in our latitude, would be unable to sweep away.

With this aërial character of spire, the tower, however massive below, should be designed to assimilate above. Indeed, the tower-pinnacles, or spirelets surrounding the base of the spire, might be formed similarly to the spire, and perhaps should be so formed for harmony.

Let it not be supposed that I would have a chain-formed spire to feign or personate masonry. It would appear as what it is, an iron spire not a stone one; an especially important point in such a feature, which must not point to Heaven with a lie on its lips. There would be nothing sham about it. It might be called, from its mode of construction,—from being all bone and no flesh, a skeleton spire, but it could not be called a sham spire. It would be as real and genuine as a pierced stone spire; the only difference between it and the latter being that it must be to a greater extent open work. Nor will it violate constructive truth, *i.e.*, it will not appear to be constructed on different statical principles from those really employed in it, the chains being not really disguised chains. It is the tensile style of construction.

As to its material: I presume iron is as worthy of entering into the composition of God's house,—has as much right to rear its head into the welkin and to point upward as stone, which comes from no higher department of creation, and can have had no especial odour of sanctity given to it by its Creator, who, as he is no respecter of persons, can be no respecter of materials that his hand has made. The Tabernacle, made of linen and goats' hair, in which the Children of Israel worshipped in the wilderness, and in which was deposited the Ark of the Covenant and mercy-seat, and overshadowing cherubim, was deemed as holy as the gorgeous stone temple which replaced it.

The spire being a variation in regard to material from the tower, I deem rather a beauty than a defect. It would be no more a discordancy than a slate spire or steep roof, or than a white marble or polished granite spire would be over a free-stone tower,—a thing I have often wished to see. Expansion and contraction of metal would, I think, present no insurmountable difficulty.

I have only to add that if the idea here sketched out has ever been suggested before, I am unaware of it. I think it cannot have been, or it would somewhere have been realised.

SAMUEL HUGGINS.

Public Works in Hove.—The Hove Improvement Commissioners have applied to the Local Government Board for sanction to borrow 14,050*l.* for the purchase of land for a Town-hall, for works of paving and sewering, and for providing a depôt for storage purposes.

HYDE, ST. JAMES'S, AND THE GREEN PARKS.

IN consecutive alineation from east to west, these parks form a woodland range of over three miles, extending from the Horse Guards to Kensington, only intercepted by the great boulevard of Piccadilly.

In 1536 Henry VIII. bought the Manor of Hyde, of the Convent of Westminster, to extend his sporting-grounds; having previously purchased St. James's Park, which made a range of forest land extending from his Palace of Westminster to Hampstead Heath.

In 1574 Queen Elizabeth appointed Henry Carey, first Lord Hunsden, keeper, at a salary of 59*l.* 6s. 8d., besides a lodge and allowances,—a large sum in those days.

In 1660 Charles II. appointed Colonel James Hamilton, keeper, in the room of the Duke of Gloucester, and also granted him a triangular strip of land between the old lodge (now the site of Apsley House) and Park-lane, the old boundary, upon which plot was afterwards erected Hamilton-place and the adjacent palatial residences in Piccadilly.

In the times of James I. and previously, Spring-gardens, extending then to St. Martin's-in-the-Fields, was the fashionable promenade and sporting ground, used by all the notables of the day, and by tne King himself; but during the Commonwealth Cromwell interdicted all privilege of public user on Sundays.

The Mall of St. James's Park became afterwards more used, and Charles I. made it a favoured place of resort, the Ride of the Hyde being the open for horse-races and other amusements, when in 1635 that monarch formally opened the parks to the public as pleasure-grounds.

Although William III. built a palace near Kensington, in the gardens, no great change was made until George II. and Queen Caroline added to and improved the palace as a residence, and cut off 300 acres of the park. The whole area was then laid out, planted, and walled in; and the nine pools or ponds transformed into the present Serpentine lake, 20,000*l.* having been expended thereon.

The greatest improvement in the parks of late years has been the demolition of the old obscene walls, and the substitution of iron railings, which gives a sense of enlargement, as viewed either from without or within, and that even when a width of from 10 ft. to 20 ft. may have been added to the road. In the great western boulevard of Piccadilly this is more particularly obvious where thirteen majestic plane-trees, which were formerly interned in the park, now stand out on the paved footway, in vigorous growth. In Park-lane also, as in the Bayswater-road and other places, the disclosure of park view and the opening out of the roadway has not only improved the aspect, but added, in many cases, 50 per cent. to the value of the houses.

In the Green Park there is, however, one great default, and that is the want of a carriage-road, to take the traffic between St. James's and Hyde Park. There is a fine and spacious road leading from the palace to Hyde Park, which runs straight alongside Buckingham Palace garden-wall; but at about 300 yards from the Duke of Wellington Arch this road curvets to the left, and, close to the old brick wall of Grosvenor-place, curvets back again to the arch-entrance grotesquely surmounted by the statue.

Parallel to this royal road there is, however, another, which if carried on *indirectum*, would strike out on the open space adjacent to the arch, and into Piccadilly exactly opposite to the park gates. Such a road, although now little over 20 ft. wide, need not interfere with the royal route, and would be of incalculable value to the whole population. There are open roads all round St. James's, also round and across Hyde Park; but no line of intercommunication through the Green Park, which, though open to pedestrians, bars the intercourse of carriages.

Some years back there were an old lodge and garden inclosed by walls in the Piccadilly centre of the Green Park, but all this has been cleared away and thrown open, after remonstrances in the *Builder* by the writer,—by whom also the new route from Westbourne-terrace (Victoria Gate) and over the Serpentine Bridge was also indicated. Since then eight gates and handsome lodges have been erected round Hyde Park, two on the north side, two on the east, and four on the south. These are utilitarian

and need not be objected to; but in the very centre and near the old Ranger's lodge, with its eight or ten acres of inclosed lawn, paddock, stables, and offices, there have been lately built a spacious garden, mansion, a lofty engine-house and office for the Board of Works, a large barrack with a smaller one, and two commodious villas on the Receiving-house side; added to which the vicinal magazine with its four permanent guards mars the most picturesque nook near the bridge, and therefore the most observed and palpable coigne of the park. In this beautiful woodland centre there is every indication of a growing village and population, 100 head of poultry, and of course milch cows, and so on.

Now, as the value of this park to the millions is in its trees and openings, its glades and shades, and, above all, in its lovely flower-walks and shrubbed plantations, surely the obtrusion of houses and domiciles is a most unjust invasion of their rights. The population increases yearly, and the town boundaries steadily advance upon the country, whereas the parks cannot be enlarged.

The style of landscape gardening, shrubberies, and flower-beds cannot be surpassed, so far as Hyde Park is concerned; but the condition of Kensington Gardens, with its deformed and decaying timber trees, would be considered a disgrace if witnessed in the plantations or groves of any country gentleman or resident holding only 100 acres of woodland.

A resident sub-ranger seems to give no protection against spoliation and waste; in fact, the only chance of redress would seem to be in the abatement and demolition of every domicile erected within the park borders, and the opening out of all inclosures, committing all to the care of a landscape-gardener who, like the present official, exhibits such taste and skill in the arrangement of flower borders and in the creation of fantastic and varied shrubberies.

QUONDAM.

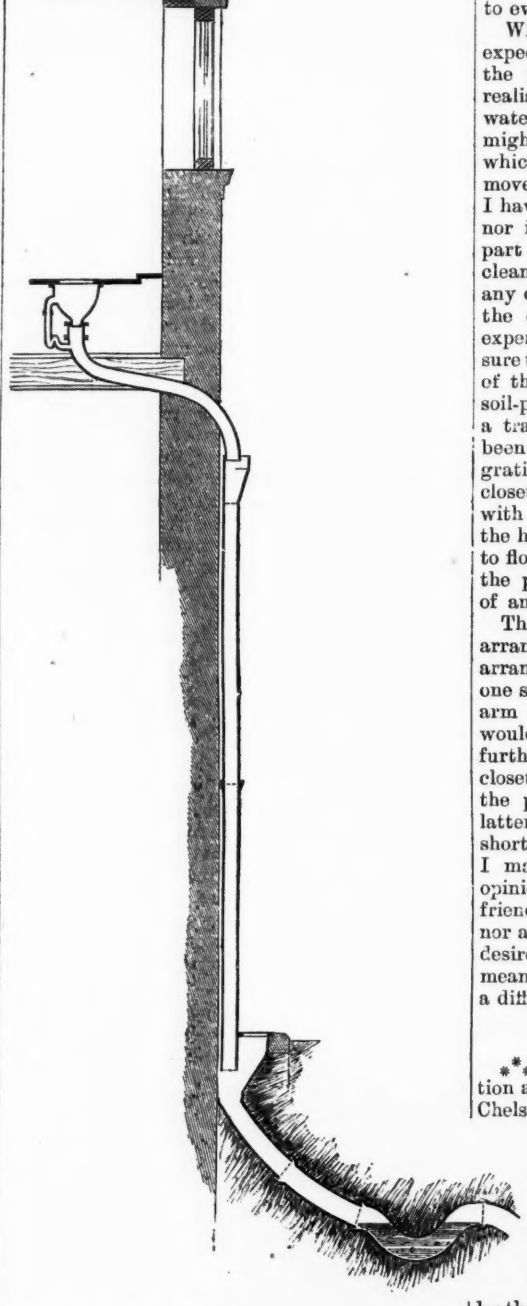
ON HOUSE DRAINAGE BY OPEN INSTEAD OF CLOSED SOIL-PIPES.

IT is hardly necessary to enter on a lengthy essay to urge the desirability of having our houses efficiently drained, as nearly all people now-a-days are fully alive to the necessity; and the numerous inventions which are continually being brought out prove that a very wide-spread feeling exists that our present arrangements are far from satisfactory, and are capable of much improvement. One of the drawbacks of all these new inventions is, that they complicate more or less the plan generally in use; either the mechanism is more elaborate, and consequently more liable to get out of order, or they require greater attention, as in the case of all those in which the improvement consists in the mechanical application of any deodorising or disinfecting chemical; with any arrangement of this latter kind, when the novelty is worn off, it ceases to be attended to regularly, and so becomes practically useless.

My object in writing these notes is to explain a plan I have adopted, and which has been found to be perfectly efficient; it is simpler and less costly than the plan generally in use; and as it is absolutely impossible for sewer-gas to enter a house where it is used, it follows that the occupants are free from all danger from this source,—a point that cannot be too strongly dwelt upon, when it is remembered that several of our most serious outbreaks of epidemic fever have been directly traced to a defective state of house-drainage, and also that medical men tell us that much illness, and even mortality, exist amongst children and people of delicate constitution, arising from the same cause; in fact, no one is safe: it is a danger ever present, and it is seldom discovered or even suspected till too late.

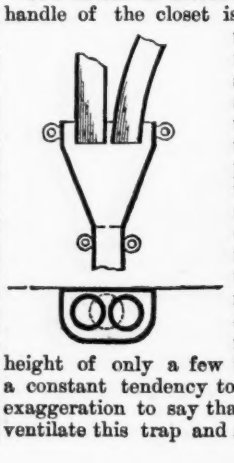
The modern plan, with hardly an exception, is to connect our closets with the underground drains by closed soil-pipes, trapped at one or more points. The plan I have adopted is to connect the closets with the drains by open soil-pipes, and to leave out all traps with the exception of one. Thus no lead D-traps are required; no so-called ventilating pipes; no expensive junctions to make (always a source of weakness and danger): the whole arrangement becomes simplified at once; and as a natural result is not so liable to get out of order. In the ordinary plan a quantity of foul sewer-gas is constantly being generated in the long length of closed soil-pipe. In my plan, as the soil-pipe is open, no gas can be generated, or remain in it.

The simplest plan is to make a short arm of lead pipe attached direct to the lower portion of the valve-box; just where the D-trap generally comes, and led through the exterior wall of the house in an easy bend, discharging into a funnel-shaped head of lead, forming the top of the soil-pipe. The soil-pipe is 3 in. in diameter, but might with advantage be less, open at the



top and bottom, the lower end terminating about 3 in. or 4 in. below the level of the ground, and directly over a carefully-constructed syphon trap of glazed earthenware, but leaving an open space of 6 in. or 8 in. between the foot of the soil-pipe and the top of the syphon.

The action is extremely simple,—when the handle of the closet is pulled up, the contents of the pan rush, unimpeded by any trap, straight through the short arm first mentioned, fall directly down the vertical open soil-pipe, and sweep through the trap with considerable force, into the underground drain; there is no place for any matter to lodge. In the ordinary arrangement, the contents of the pan fall into the D trap from a height of only a few inches; this trap has a constant tendency to choke; and it is no exaggeration to say that it is never clean. To ventilate this trap and soil-pipe, it has become



a custom to put in what are called "ventilating pipes," carried to the ridge of the house or to the top of a chimney. They certainly serve to take off the extreme pressure of gas constantly accumulating in the upper part of the soil-pipe, and some of which is generally liberated whenever the handle is pulled up; but that is all they do; in no way can they be said to ventilate the soil-pipe, any more than a room could be said to be ventilated if it had a 2-in. pipe inserted in the ceiling; they are better than nothing, and that is all that can be said for them; but in this arrangement no ventilating pipes are required, as the air gets freely to every part.

When first I adopted this arrangement I expected occasionally to find impure matters at the foot of the soil-pipe, and had not fully realised the very cleansing effect of the fall of water. I also thought it probable that this part might become coated over with a foul deposit, which might occasionally require to be removed, but after an experience of two years, I have never once seen anything objectionable, nor is there the slightest deposit on the upper part of the trap. This trap has never been cleaned out, nor touched in any way, nor have any disinfectants ever been poured down any of the closets. Then I was warned by sanitary experts and plumbers alike, that there would be sure to be a smell; first, at the grating at the level of the ground; secondly, at the top of the open soil-pipe; and thirdly (owing to the absence of a trap), in the closets. No one has ever yet been able to detect the slightest smell at the grating, nor at the top of the soil-pipe, and the closets are exceptionally sweet. They are fitted with "water-waste preventers," so that when the handle is held up till the water has ceased to flow, the air can generally be felt to blow up the pipe, but it never brings with it any smell of an offensive nature.

The accompanying diagram shows the general arrangement. One of the blocks shows the arrangement when two closets discharge into one soil-pipe. One of these closets has a short arm about 4 ft. long, the arrangement that would be most usually required; but in order further to test the system, I made the other closet with a long arm, upwards of 12 ft. from the pan to the open mouth of the pipe. This latter is just as satisfactory as that with the shorter arm, being absolutely free from smell. I may add that I shall be glad to have the opinions of all interested in this subject, whether friendly or hostile. I have no patent to protect, nor any interest of any kind at stake. My only desire is to secure the simplest and most efficient means of effecting that which is admitted to be a difficulty and a source of danger.

R. NORMAN SHAW, R.A.

*** We have seen the arrangement in operation at a house built on the Embankment at Chelsea for Mr. Matthey, from the designs of Mr. Shaw, and were impressed by its simplicity and efficiency. Theoretically it might be urged that sufficient accumulation, even if small, would take place at the foot of the down-pipe to contaminate the air which passed up it. In practice, however, this is not the case, the rush of water down the pipe, increased by the smallness of the pipe's diameter, carries all before it.

THE PREVENTION OF INUNDATIONS.

AT the meeting of the Metropolitan Board of Works on the 4th inst., the clerk read a letter which had been received from the Home Office, acknowledging the receipt of this Board's letter on the subject of the tidal overflows of the River Thames, and stating that the matter appears to the Home Secretary to be of such vital importance, that he hopes some means may be found by which another session may not pass without some remedy being provided.

Mr. Roche moved, "That the communication be referred to the Works and General Purposes Committee for consideration and report," and said he trusted the result would be that some measure might be prepared which, if not perfectly satisfactory to all parties, would at least have the effect of getting rid of the evils complained of.

Mr. Freeman seconded the motion, and, with Mr. Roche, earnestly hoped that something would be done at the earliest possible moment to put an end to these disastrous overflows.

After a few remarks from Mr. Richardson, the motion was put and carried.

ROSLIN CASTLE.

SOCIETY OF ANTIQUARIES OF SCOTLAND.

THE first meeting of this society for the present session was held on the 10th ult., when a paper was read entitled "Roslin Castle, its Buildings, Past and Present," by Mr. Andrew Kerr, architect, formerly of Her Majesty's Office of Works. He remarked that it seems probable from various notices and traditions that there may have been a stronghold of some kind at Roslin so early as the eleventh century, but no remains of any such early work can now be traced. The oldest part of the present castle appears to be of the early part of the fourteenth century, and was erected by Sir William St. Clair, who set out with the Bruce's heart to Palestine, and fell fighting against the Moors in Spain in 1330. The castle was added to by his great-grandson Henry, the second of the St. Clair line of the Earls of Orkney. He built the great keep or south-west tower. Sir William St. Clair, third Earl of Orkney, the founder of the Collegiate Church of Rosslyn, also made large additions to the castle. These exhibit many French features, and Mr. Kerr accounted for this by the fact that Sir William and his wife resided for some time in France. In 1455 James II. gave Sir William the earldom of Caithness in exchange for Nithsdale, and afterwards, in consideration of the elegant buildings he had erected, conferred upon him the dignity of Grand Master Mason of Scotland, a title which remained in the family till 1736, when it was given over to the Scottish Masonic craft. In 1544 the castle was burned by the English forces of Henry VIII. It was partially restored by Sir William St. Clair after 1580. His arms and those of his wife are seen on a shield over the fire-place of the great hall. The building was continued by Sir William of Pentland, his son, whose initials, with the date 1682, are cut on the lintel of the door leading to the great staircase. The ceiling of the dining-room, which is richly decorated, bears in the centre panel the Rosslyn arms and the date 1622. It is immediately after this that the castle seems to have been in its most complete condition. The north-west side was battered down and the castle plundered by General Monk. It was partially restored after this, but again attacked and plundered by a mob in 1688.

A prominent feature of the meeting was the exhibition of the legacy left to the museum by the late Mr. James Drummond, R.S.A., who had been for twenty-six years one of the honorary curators. There were also exhibited the extensive series of drawings purchased by the Society at the sale of the Drummond collection. These include a series of upwards of 200 of the sculptured stones and crosses of Iona and the West Highlands, thirty drawings of market crosses, and about 300 beautifully-finished drawings of Highland arms, brooches, &c. These drawings have been acquired by the Society by means of a guarantee fund subscribed by members and others.

IMPORTANT TRADE UNION CASE.

SOME time ago an action was raised in the Glasgow Sheriff Court by Messrs. Couper & Sons, flint-glass cutters, Glasgow, against John M'Farlane, secretary to the Flint Glass Cutters' Trade Union, for 100*l.* in name of damages, which they had sustained through the defender and other members of the Union having intimidated and sent away from their works men from England whom the pursuers had engaged during a strike of their workmen. Sheriff Galbraith, before whom the case was tried, gave his decision last week, finding that the several workmen mentioned in the petition were seduced and assisted to leave the pursuers' employment by an unlawful combination; that the defender was a member of that combination; that he was a party to, and assisted in, the removal of those men from the pursuers' works; and that, therefore, the defender was liable to the pursuers in damages, and assesses them at 50*l.* He also finds pursuers entitled to expenses. In a note to his interlocutor, his lordship says that the men were frightened into going away. They were repeatedly told that they were doing the old hands an injury by remaining, and that unless they left something might be done to get rid of them. He was clearly of opinion that a combination existed for the express purpose of emptying the pursuers' works. The defender's own witnesses admitted this. Such a combination being purely illegal, the only points for his lordship to consider were—1, what connexion had been proved between the defender M'Farlane and the society of which he was a member; and, 2, the amount of damages the pursuers were entitled to. He considered that the pursuers had sufficiently proved complicity on the part of the defender as to warrant decree in their favour. As to the amount of damages, he thought 50*l.* was a fair sum, as the pursuers only wanted to stop the annoyance and obstruction to which their workmen were subjected by outsiders. It was a practically understood thing that in all those unions there were certain men, known quite well, who were what was called wire-pullers, and yet one could not say precisely that they had been seen doing anything, although everybody knew that they were really the men that were acting. In the present case his lordship thinks that that was the position the defender occupied throughout the proceedings.

BUILDERS' CONTRACTS.

LEWIS *v.* BRASS.

IN this case, which was recently before the Court of Appeal, a question of great importance to builders and contractors was raised, viz., whether the acceptance of a builder's tender in writing amounted to a contract between the parties.

The plaintiff, desiring to make certain alterations to his premises, had sent to a number of builders bills of quantities, with envelopes entitled "tenders," for them to return with the price for which they would undertake the work, and in answer thereto the defendant sent a tender in these terms:—

"I hereby agree to execute complete within the space of twenty-six weeks from the day of receiving instructions to commence the whole of the work required to be done in alterations and additions to above premises, with the best materials, in strict accordance with the drawings and specification, and to your entire satisfaction, for the sum of 4,193*l.*"

The plaintiff's architect accepted this tender in these terms:—

"I am instructed by my client, Mr. John Lewis, to accept your tender of 4,193*l.* for works as above referred to. The contract will be prepared by Messrs. Underwood & Colman, Mr. Lewis's solicitors, and I have no doubt it will be ready for signature in the course of a few days."

The defendant, however, found that he had made a mistake in his estimate and withdrew his tender. The plaintiff had the work done by another builder for a larger sum, and sued the defendant for the difference.

At the trial before Mr. Justice Hawkins he left it to the jury whether the parties intended that they should be bound by the document as a contract. The jury found that they did, and gave a verdict for the plaintiff. Three judges of the Queen's Bench Division (Mr. Justice Mellor, Mr. Justice Lush, and Mr. Justice Field) upheld the verdict, and the defendant, the builder, appealed from that judgment. In the course of the argument Lord Justice Bramwell observed that he did not doubt that the parties thought they were bound by the acceptance of the tender. At the close of the arguments the Court took time to consider their judgment, which they now delivered, dismissing the appeal.

Lord Justice Bramwell.—We are of opinion that this judgment must be affirmed. There certainly was evidence to go to the jury that the parties were doing more than negotiating, and I think the verdict of the jury was right, that a contract was made, and not that certain steps in a negotiation had been made. I agree with the opinion of the Court below for the reasons there given when the appeal to them was made. But a point was made before us that was not mentioned in the Court below, and it was this,—that the tender of the defendant had not been accepted "pure and simple," but with an additional term. And that contention was founded upon this,—that the letter of the plaintiff's agent, after saying, "I am instructed by my client, Mr. John Lewis, to accept your tender of 4,193*l.* for works as above referred to," went on and said, "The contract will be prepared by Messrs. Underwood & Colman." It was said that meant, "I don't really accept your tender as you have made it; but I accept it with this additional term, that a contract shall be made between you and my client by certain professional gentlemen." I don't think that is so. We must take into account that it is a matter of common knowledge that in works of this magnitude there generally is a formal contract drawn up between the parties, knowledge which we are justified in bringing to bear upon this case, as the defendant does not take any exception to this matter in the letter; and I think that the right construction to be put upon that is to read the words as though they were, "Of course, a contract will be desirable, and that will be prepared by Messrs. Underwood & Colman," not making the contract an addition to the terms agreed upon, but simply intimating what, in the opinion of the writer, was a convenient way to carry out the intentions of the parties. If that be so, the acceptance was pure and simple, and not in any way qualified or one containing any additional terms.

Lord Justice Brett said the moment the letter was written there was a contract made and complete. The latter part of that letter, speaking of a contract, speaks of a contract already made; that would be drawn up in the usual form and presented for signature.

Lord Justice Cotton agreed that on the construction of the documents there was a binding contract between the plaintiff and defendant, the acceptance in the letter not being rendered subject to the condition that a contract was to be agreed to and signed by the parties, and discussed certain decided cases in support of his opinion.

COMPENSATION CASE.

SIR SPENCER MARYON WILSON *v.* THE METROPOLITAN AND ST. JOHN'S WOOD RAILWAY.

THIS case was concluded at the Sheriff's Court, Red Lion-square, on the 31st ult., before Mr. Under-Sheriff Burchell and a special jury.

The claim, as presented to the Court, was for about 35,000*l.* for land in the Finchley-road, beyond the Swiss Cottage, which was required for a new station. The company had taken a portion of land for a tunnel, and had served a notice for a further portion. A sum of 5,500*l.* had been paid for the tunnel land, and the question in the present case was the sum to be awarded for the additional land. About 6 acres were required, and on the part of the claimant it was put at from 2,000*l.* to 3,000*l.* an acre.

Mr. Alderman Ellis was the principal witness on the part of Sir Spencer Wilson, and Mr. Ritchie, surveyor, on behalf of the company. Other surveyors were called on both sides.

There was a great difference in the opinion of the surveyors. On one side it was alleged that the new railway-station would, until the property was developed, depreciate the estates of Sir Spencer Wilson, and, unless there was a main access to the station, considerably damage the owner's land. Another item in the case was a claim for 10 per cent. for compulsory sale, as usually given in compensation cases. On one side a claim of 3,000*l.* an acre was made, and on the other side 1,250*l.*, and on the same side, the new station, it was declared, would benefit the property, and not depreciate it; and further, that as the property in the neighbourhood, to some 100 acres, was in the market, the 10 per cent. for a compulsory sale was not to be awarded. On the part of the company, the jury were invited to consider that 8,500*l.* would be the full extent to be fixed, but on the part of Sir Spencer Wilson a much larger sum was suggested, as the "cream" of the land had been taken by the company.

Mr. Under-Sheriff Burchell summed up the case, and the jury returned a verdict for 17,000*l.*, with no damage for the severance.

ROTUNDA LYING-IN HOSPITAL, DUBLIN.

THE Governors of this excellent Institution have expended during the last eighteen months over 3,000*l.* in the much-needed reparation of the hospital buildings, and of the public rooms in connexion with them, also in making important alterations and sanitary improvements.

The lying-in department has been entirely separated from the chronic department, or that devoted to the treatment of diseases peculiar to women. A new detached dispensary building for extra patients has also been built.

Much remains still to be done in order to put the extensive buildings of the hospital in a state of thorough repair, which the governors hope to do by degrees, as their funds will permit.

Mr. Thomas Pemberton, builder, executed the greater portion of the works connected with the hospital; and Mr. Thomas Millard, builder, is now engaged on the repairs, &c., of the public rooms.

All the works have been carried out from the plans and under the direction of Mr. Frederick A. Butler, architect, Dublin.

THE DOUBLE-SPOUTED VESSELS IN THE TROY COLLECTION.

SIR,—I think the double vessels,—or double-necked vessels,—were made for pouring out oil and vinegar together for sauce to *wild asparagus*. This is still eaten in Italy. It is delicious; and it is always thought well to pour out the two liquids together.

F. R. C.

CONCRETE CHANNELLING.

SIR,—In reply to the letter from "Surveyor," we beg to inform you that we make our patent artificial stone for channelling and curbing, and for all purposes for which natural stone is used (cast in one section) in different sizes, and have used it upwards of fifteen years in "dwellings for the working classes" and in other buildings.

M. ALLEN & SON.

Japanese Workmen. — Mr. John Burns states that the internal fittings for the cabins of the steamship *Gallia*, now being constructed on the Clyde, for the Cunard Fleet, are to be made in Japan.

ROYAL ACADEMY ARCHITECTURAL SCHOOL.

Mr. R. PHENÉ SPIERS writes: — Will you kindly notify the following admissions to the Royal Academy Architectural School:—Probationers admitted: F. B. Bare, T. W. Besant, J. H. Buckiridge, C. W. Camphell, J. J. Gane, H. Goodall, D. A. Grigg, C. E. House, F. G. Howell, J. M. Jones, F. Miller, G. Petrie, H. J. Robinson, E. R. Small, L. A. S. Stokes, T. Watkins, G. Wheelhouse. Students admitted: 2nd Class—R. W. Collier, J. Clarke, T. Moore, C. Richardson. First Class—A. Berry.

FREEHOLD COTTAGE DWELLINGS COMPANY.

AT a general meeting, held on the 31st ult., Dr. W. H. Corfield, a member of the Board, presided, and a dividend of 5 per cent. on the preference shares, and 5½ per cent. on the ordinary shares, was declared. The Rev. F. C. Wills and Mr. W. Green, retiring directors, were re-elected members of the Board. A vote of thanks to the chairman was agreed to, and Dr. Corfield, in reply, congratulated the shareholders upon the satisfactory purchase of freehold property they had made at Walworth, and spoke of the gratifying results of the company's operations, which were clearly proved from the fact of their being able to pay a dividend of 5½ per cent. on the ordinary share capital of the company.

WATER SUPPLY.

Arbroath.—At a meeting of the Arbroath Police Commission, last month, Mr. Keith gave notice of a motion to the effect that, seeing the Nolt Loan water supply is practically inexhaustible, and is of excellent quality, there was no longer any reason why private supplies should be restricted to bakers and hotel-keepers only, and that they resolve to supply it on the same terms to private houses for culinary purposes only. The minutes of the Cleansing Committee were read, from which it appeared that the Clerk had been instructed to write a letter to Mr. John Murray, contractor, regarding his manure depôt at the Nolt Loan Well. Mr. Murray had replied that he was bound by his lease to manure his land. The present heap would be removed as soon as the dry weather set in, provided they could indicate some other spot on which to lay it down. He also intimated that the ditch through his land, which flowed past the well, was at one time pure water, which served his cattle. Since the new houses had been built, and their drains connected with the ditch, it had been an open sewer. He indicated that unless the nuisance were abated he would have to sue the Commission for damages. The matter then dropped. The Clerk then read a letter from the Board of Supervision, the writer of which (Mr. M'Niel) stated that the Nolt Loan water was insufficient in quantity and bad in quality; also, that the town being cleansed by contract, it was not sufficient, besides it was not competent for the Police Commissioners to do so. Mr. Dickson corroborated Mr. M'Niel's statements in every respect. The Nolt Loan Well had all along been a miserable makeshift. The supply had always been totally inadequate for a town of 23,000 inhabitants. No supply could be sufficient when it had to be carried off the streets. Besides, the field where the well was sunk was the most highly-manured field in Forfarshire, and it was impossible but that the water must be contaminated. Nevertheless, some of the members of the Commission who are opposed to obtaining a better supply, state that the water from the well is more palateable than that from Loch Katrine!

High Water Rates in South London.—A public meeting was held at the Bridge House Hotel, London Bridge, on the 13th ult., "to express," as the placards announcing the meeting put it, "the indignation felt in the district at the injustice of the course taken by the Southwark and Vauxhall and other water companies in abruptly and largely increasing the rates, and to consider the best means of remedying this grievous wrong." Mr. T. C. Brooke read a list of the increased charges which had been made by the Southwark and Vauxhall Company in seventy-nine cases, the increase being in one instance from 4*l.* to 37*l.*, in another from 4*l.* 4s. to 24*l.*, and in another from 20*l.* to 120*l.* 11s. 6d., the aggregate increase in those seventy-nine cases being from 732*l.* 11s. 9d. to 1,617*l.* 17s. 6d., or 125 per cent. Resolutions were unanimously carried strongly deprecating the recent action of the company; declaring that to construe the clause in the Act of Parliament, authorising the levying of a rate "at not more than five per cent. on the annual value" as giving power to charge five per cent. irrespective of the quantity consumed, was straining the Act beyond what was intended; and appointing a deputation of twenty to wait upon the Home Secretary and the Metropolitan Board to urge the necessity of the application of the meter system (as for gas) as the only fair means of charging for water. The tone of the speeches was one of decided hostility to the continuance of the monopoly of the water companies, and expressive of a determination to place the water supply under municipal control; some distrust, however, of the Metropolitan Board of Works being manifested, and it was suggested by one of the speakers that the object of the companies was evidently to fictitiously increase their income in order to increase the sum to be paid to them as compensation, an object in which they would be defeated, by inserting a clause that the last year's income be not taken into account.

Inverness.—The formal opening of the new works by which the town of Inverness is supplied with water from Loch Ashie by gravitation, took place on the 20th ult. at the reservoir, situated at Culduthel, about two miles to the south-east of the town, the ceremony of turning on the water supply having been entrusted to Mrs. Simpson, the wife of the Provost. Mr. Paterson, engineer of the works, presented Mrs. Simpson with a silver cup in commemoration of the event. Loch Ashie, from which the new supply of water is obtained, is six miles and a half distant from Inverness. Its level has been raised 2 ft. by embankment; a channel 100 yards long, and partly paved with stones and grounded with concrete, has been constructed at the outlet; and there is a height of 5 ft. of water over the mouth of the conduit-pipe. From the lake to the reservoir the distance is rather over four miles; the pipe used for the first mile being 11 in., and for the rest of the way 9 in. The track consisted mostly of clay, varied in some parts by running sand and moss, and at certain places, where the mixture was very close and compact, the cutting was by no means easy. The reservoir, situated on the farm of Oldtown of Culduthel, two miles and a quarter from the town, is simply a square basin 300 ft. wide at the top, 20 ft. deep, and capable of containing seven million gallons of water. One side is formed of the natural slope of the ground; and the other three sides form a vast rampart of great strength and thickness, and having a puddled wall embedded in the centre throughout its entire extent. At the point of greatest pressure, the embankment is 100 ft. thick at the base; at other places it is 45 ft.; and it slopes upward to the top, which forms a beautiful bulwark 12 ft. wide, enclosing the waters like a massive frame. The bottom and sides are laid with concrete. The outlet pocket is built of heavy concrete, 450 cubic yards in extent, and varying in thickness from 3 ft. 6 in. to 6 ft. A 12-in. pipe leads from the reservoir to the town.

THE MASONS' STRIKE.

SIR,—I read with some amazement the letter of Mr. H. Nisbet, Secretary of the Strike Committee, in your number of 22nd December. He ventures to state, distinctly in opposition to Mr. Broadhurst, that a union mason is allowed to work for less than the minimum rate if not up to the mark. Again he denies (in opposition to what we all well know), that "the Society limits the amount of work done by its members." What, then, is the meaning of fines for chasing? The union have now ample leisure for reflection, and why do they not see about altering their rules for the benefit of all? A very few years since I used to let the fixing of masonry by piece-work, and men could earn 3*l.* or 4*l.* per week. Why should the Union prevent these advantages to the skilful industrious man? Why, again, when trade is brisk, and especially when men are employed at a distance, should masons not be allowed to make a little overtime? In truth, sir, the rules and practices of the masons' union belong to the dark ages, when laws were made to prevent the extension of the metropolis, and to settle the price of bread and other sort of things on which people look back with wonder. I am now happily retired from business, and am able to do so by having always used vigorously the talents which God gave me. Had I allowed myself to be restricted to work so many hours a day, and not to do any more than some of my idle acquaintances, I should now be in a very different position.

A RETIRED BUILDER WHO HAS WORKED HARD.

The Building Trade.—At a meeting of the committee of the Central Association of Master Builders of London, held on Wednesday, the following resolution was carried unanimously:—"That the state of the building trade does not warrant any increase in the present rate of wages, nor is the committee prepared to recommend any reduction in the hours of labour, and, therefore, see no advantage in the proposed conference."

CHURCH-BUILDING NEWS.

Garston.—The new parish church of St. Michael, Garston, has been consecrated by the Bishop of Chester. The new church, which takes the place of the old parish church (which only accommodated 250 worshippers), is Gothic in style, and consists of nave, 92 ft. 6 in. by 22 ft.; chancel, 30 ft. 6 in. by 21 ft. 3 in., with apsis at east end; north and south transepts, 28 ft. 6 in. by 23 ft. 9 in.; north and south aisles, 68 ft. 9 in. by 11 ft. 9 in.; tower at north-west, 10 ft. by 10 ft. internally, used as a porch; opposite to which is a south porch, 11 ft. 6 in. by 9 ft.; organ-chamber at south-east, 15 ft. by 14 ft.; vestry at north-east, under which is a warming-chamber, 15 ft. by 14 ft. The church contains accommodation for 800 adults, one-half of the sittings being free, provision being made for choristers at the north and south of the chancel. The nave, which is lofty and of good proportions, is separated from the aisles by stone arcades of four pointed arches, supported by stone columns alternately circular and octagonal, with moulded bases and moulded and carved capitals, the large arches over the transepts being supported by double columns, the other side of these arches being supported by richly-carved and moulded brackets in the east wall of the nave. The nave roof is of high pitch, and the principals are constructed of laminated pitch-pine boards, moulded at bottom, and bolted together as an arched rib. The aisle roofs are on the lean-to principle. The tower has yet to be surmounted by a spire. The contract was taken by Mr. C. W. Mullin, of Liverpool, for the sum of 5,830*l.* Mr. Archer was the clerk of works. The whole has been erected from the designs and under the superintendence of Messrs. T. D. Barry & Son, architects, Liverpool.

Bradford.—The new Church of St. James, Bolton-road, Bradford, has just been consecrated by the Bishop of Ripon. The site abuts upon the Bradford and Eccleshill-road, bounded upon two sides by new streets. The plan comprises nave, aisle, chancel, organ-chamber, and vestry. The transeptal wings are occupied by the organ and clergy vestry. The church is approached by a porch, formed by the ground stage of the tower, which stands at the north-east angle of the building, with the doorway facing the road to Eccleshill. The dimensions of the church are: nave, 70 ft. long, 24 ft. broad, and 40 ft. high; aisles, 63 ft. long, 10 ft. broad, 18 ft. high; and chancel, 32 ft. long, 24 ft. wide, and 35 ft. high. The distance from the ground to the top of the stonework of the spire is 140 ft., and the vane adds about 10 ft. to the height. Accommodation is provided in the building for 400 persons. The whole of the interior of the church is plastered, with the exception of the windows, frames, and arch-dressing, which are of ashlar. The style is Early English, with a slight mixture of Continental design in the details. The church has been erected at the sole expense of Mr. J. A. Jowett, of Bolton. The following are the contractors who were connected with the progress of the building:—Mason and builder, Mr. Isaac Rhodes, Manningham; joiner, Mr. G. Booth, Bolton; plumber, Mr. J. Rhodes; slater, Mr. A. Hill, Bradford; plasterer, Mr. Hargreaves, Bradford; painter, Mr. Wallace, Bradford. The mosaic pavement in the porch has been executed by Messrs. Simpson & Sons, of London, who also have provided the wall decorations. The font and pulpit are by Messrs. F. Stake & Co., Bradford. The east window is by Messrs. Shrigley & Hunt, of Lancaster; and some grisaille win-

dows have been supplied by Mr. Edmondson, of Manchester. The lectern has been supplied by Messrs. Hart, Son, Peard, & Co., of London; and the whole of the gasfittings have been executed by Messrs. Hunt, of Birmingham. The whole edifice has been constructed from the designs, and under the superintendence, of Messrs. Andrews & Pepper, architects, Bradford.

Stoneywood.—A new church for the Stoneywood district of the parish of Newhills, Aberdeenshire, is about to be erected. The chief contracts for the work have been entered into. The church has been designed by Messrs. Henderson & Son, Aberdeen. It is of Gothic design, with gable facing the public road, and there will be a tower with belfry rising to a height of 78 ft. The church will be seated for about 800. A hall, vestry, and elders' room are to be erected behind the church. The principal contracts for the erection of the church and hall amount to about 3,100*l.* Further works will cost about 500*l.*, making a total of about 3,600*l.*

Tinsley, near Rotherham.—The foundation-stone of the new church (to take the place of the old one) here was laid on the 2nd inst. by Mrs. Overend, the donor of the church, in memory of her first husband, Mr. Hounsfield. Mr. G. E. Street, R.A., is the architect. The church, which is in the flowing Decorated style, is to consist of nave, north aisle, chancel, vestry, organ-chamber, and south porch. A bell-turret will surmount the chancel arch, and the east window, which has five lights, is to be filled with stained glass by Messrs. Clayton & Bell. The contractor for the building is Mr. James Fidler, of Eckington. The cost will be about 5,000*l.*, with accommodation for 397 persons. There was a very fair gathering of parishioners and others. Earl Fitzwilliam, with the Countess Fitzwilliam, Admiral Douglas, Mr. Overend, Q.C., Mrs. Overend, the vicar (Rev. J. F. Buckler) &c. His lordship presented the inscribed silver trowel and mallet to Mrs. Overend, who laid the stone. Mr. A. Hodgson is clerk of works.

DISSENTING CHURCH-BUILDING NEWS.

Ballymacarrett.—The foundation-stone of a Presbyterian church at Ballymacarrett has been laid. The church will occupy a prominent position on the Newtownards-road, in the centre of a rapidly-increasing district. The building will be a parallelogram on plan, with a circular tower attached to one extremity of the vestibule. Sittings will be provided for 430 persons on the ground-floor, and the galleries will accommodate 270 persons. The church will be entered by wide and lofty doorways, with two orders of deeply-recessed columns, having simply-carved caps and moulded bases, above which rest boldly-moulded arches aud labels. Large mullioned windows, with traceried heads, will be placed in the front gable over the doorways. The sides of the church will be pierced between the buttresses with coupled windows, having trefoil cusped heads. Triple lights in two heights are placed in the transepts. The round tower, which terminates at a height of 100 ft. in a lofty weather-vane, will provide, in conjunction with another staircase, ample access to the galleries. All the external walls will be built of the local Silurian slate in random-coursed work, with dressings of Scrabo sandstone. The windows throughout the church will be filled with cathedral glass of varied tint in lead quarries. The ceilings will be plastered between the tie-beams, which will be stained dark and varnished. The builder is Mr. John Russell, Donegall Pass, and the works are being carried out from the plans and under the superintendence of the architects, Messrs. Young & Mackenzie, Belfast. The cost will amount to nearly 3,000*l.*

Deritend.—On the 26th ult. the memorial stone of a new Baptist chapel and Sunday schools was laid at Warwick-street, Deritend. The chapel will measure 60 ft. by 20 ft., and 15 ft. to the wall plate, with a small gallery at one end for the organ, choir, and children. For the purposes of a Sunday school the room will be divided into class-rooms by means of movable partitions. The front elevation of the building is to be of Gothic design, but wholly of brickwork. The contract for the erection of the chapel was about 600*l.*, but other contingent expenses will bring up the entire cost to something like 800*l.* Mr. George Ingall is the architect, and Mr. Lee, of Aston-road, the builder.

Armagh.—The memorial stone of a new Presbyterian Church was laid in Armagh on the 4th inst. The new church will occupy a site at the junction of Russell-street with the Mall, will partake in its general features of the English Gothic of the fourteenth century, the plan comprising a nave and two side aisles, having a total width of 55 ft. within the walls. The columns of the aisles are cast metal, of larger dimensions than constructively necessary, in order to avoid poverty of effect. Boarded ceilings will be used throughout. Galleries are placed against the walls on three sides. Sittings are provided for 470 persons on the ground-floor, and the galleries accommodate 350. Owing to the difference in level between the Mall and Russell-street, a basement is formed below the church, which will be utilised as a sexton's dwelling and for other purposes. At the junction of Russell-street and the Mall a pinnacled tower rises to a height of 100 ft. to the belfry. From this stage rises the spire, with tiers of lucarnes on each face, finishing at a height of 180 ft. with a vane. Messrs. J. & J. Guiler, Belfast, are the contractors for the work; and Mr. John Rhind is the clerk of works. The architects are Messrs. Young & Mackenzie, Belfast. The cost will be about 10,000*l.*

Banff.—A new Methodist Church is about to be erected in Banff. The site is between Reidhaven-street and the Young Men's Christian Association Hall, with frontage to Seafield-street. The plans, prepared by Mr. Ormiston, of Cousin & Ormiston, architects, Edinburgh, are for a church with a spire, and a manse. The scheme further includes a school, which may be erected if sufficient means are obtained. The design shows a Gothic building with sittings for 259 persons. It is estimated that the church buildings will cost about 1,400*l.*

Gateshead.—A new Presbyterian Church, situate in the Durham-road, Gateshead, was opened on the 26th ult. The building has accommodation for about 900 adults, and has been erected from the design of Mr. J. J. Lish, Newcastle. It is in the Gothic style. The plan comprises a nave and two side aisles, with entrance porches and vestibule, and at the west end of the building there are a lecture-hall, sessions-house, minister's vestry, lavatories, and heating chamber. The most prominent features of the exterior are the tower and spire; the east gable, with its four-light grouped and traceried windows, and grouped entrance-door; and the south gallery entrance-porch. The spire is about 150 ft. in height. The building has been decorated throughout from designs by the architect, which have been carried out by Messrs. Adam Robertson & Son, Newcastle. Both plain and stained glazing have been executed by Messrs. W. J. Bover & Company, Limited, of Leeds. The gas-fittings have been manufactured by Messrs. T. Brown & Co., of Birmingham. The heating of the building was placed in the hands of Messrs. Dinning, Cooke, & Co., of Newcastle. Messrs. White & Sproat, of Blyth, have carried out the contract for the work, with the assistance of the following sub-contractors:—Mr. Wallace, plasterer; Mr. Falconer, ironfounder; Messrs. Russell & Davis, plumbers, all of Newcastle. The wood-carving has been done by Messrs. G. Robinson & Son, of Newcastle; the stone carving being by Mr. Fielding, sculptor, of Leeds; while the upholstery throughout has been executed by Messrs. Carnegie & Gullachsen, of Newcastle. The total cost has been about 7,000*l.*

ROMAN CATHOLIC CHURCH-BUILDING NEWS.

Dundee.—For some time back the sanctuary of St. Andrew's Roman Catholic Chapel has been undergoing a process of re-decoration, and a new altar and throne have just been erected, these finishing the work of adornment. The altar and throne are of Gothic design, and are composed of solid wood, carved and gilded. From the base to the top they are 22 ft. in height, and are placed above the marble tabernacle. Four pillars with gilded capitals ascend over the throne, and have long finials, so as to carry the flying canopies, which are clad on the under portion with lancet shafts, having crocketed tops. Springing from the tops of the finials are buttresses to support the lantern above the flying canopies, which are of octagonal form. These buttresses in turn support a smaller flying canopy, the whole finishing off with a crocketed finial. The tabernacle has been provided with niches on each side to correspond with the niches at the sides of the altar. The new reredos which has been erected forms a pleasing background to the altar, the dark panels showing to advantage the gilded pillars and cusped panel-heads. The appearance of the sanctuary is considerably enhanced by the erection of the altar and throne, which are beautiful pieces of workmanship, and harmonise well with the surroundings. They were designed by Mr. Patterson, carver, Edinburgh, who has also executed the work of their erection. The whole of the decorations have been carried out under the superintendence of the Rev. Mr. Clapperton.

SCHOOL-BUILDING NEWS.

Devonport.—The foundation-stone of the new buildings for the Devonport High School for Girls has been laid by Sir John St. Aubyn. The site is in Albert-road, Stoke, and adjoins St. Michael's Church eastwards. There is a considerable fall in the surface of the land both southwards and westwards, and the street level is a few feet above that of the site. The lower story of the new building, though entirely above ground on the south side, will therefore appear as a basement in the front. At present only a portion of the complete design is to be erected. Eventually the entire building will accommodate 250 pupils, the number to be now provided for being 150. There will be three floors: the basement, containing a large play-room 50 ft. by 17 ft., and a dayroom 25 ft. by 19 ft.; class-rooms and other accommodation for the Kinder-garten department, rooms for the caretaker, heating chamber, and all conveniences; the ground floor, comprising cloak-room, head mistress's room, secretary's office, and three large class-rooms; and the upper floor, containing a room for the assistant mistresses, and four large class-rooms. Externally, the structure will present a symmetrical front to Albert-road; the central range, with three dormer gabled windows, being flanked by projecting wings which are carried up as gables of Elizabethan or Tudor design. All the external facings will be of Portland cement, which has been adopted on account of the great difficulty experienced in otherwise erecting a building impervious to moisture. The architect is Mr. H. J. Paull, of London and Manchester. The contractor is Mr. Berry, of Plymouth. The clerk of works is Mr. Siddall.

Over Darwen.—The foundation-stone of the additions to the Belgrave Independent Chapel schools was laid on New Year's Day. They are situated in the Bolton-road. The design is in character with the present chapel, which is of the Perpendicular style, local stone parpoints with ashlar dressings will be used, the windows to have tracery heads. The lecture-hall is to have an open-framed timbered roof. The additions consist of a lecture-hall, 86 ft. by 41 ft., capable of seating 500 persons, and has a prominent tower entrance and staircase. Under the above is an infants' school, 38 ft. by 15 ft. 6 in., and a Sunday-school, 46 ft. by 41 ft., with four class-rooms, 17 ft. by 12 ft. These are connected by a passage with the chapel vestries and play-ground at back of the chapel, also with a mixed day-school, 54 ft. by 28 ft. 6 in., and eight class-rooms, approached by a staircase; and adjacent thereto are cloak-rooms, lavatory, library, and tea-room. The total accommodation provided is for eight hundred children. The chapel will have a new organ-chamber, which will join the new block of buildings to the present chapel. The contract is being carried out for the sum of 5,000*l.* The contractors for the works are Messrs. Lloyd & Millward, of Over Darwen. The architect is Mr. W. Kenyon Knapp, late Ernest Bates, of Manchester.

STAINED GLASS.

London.—On New-Year's Day a memorial window, possessing more than a merely local interest, was unveiled in the church of the united parishes of St. Clement's, near Eastcheap, and St. Martin Orgar's. The parishioners, desiring to commemorate three eminently distinguished men formerly connected with their church, commissioned Mr. W. G. Taylor (late O'Connor & Taylor), of Berners-street, to design and execute, from authentic pictures, life-size portraits in glass of Bishop Pearson, the author of "The Treatise on the Creed"; of Thomas Fuller, the Church historian; and of Brian Walton, Bishop of Chester, the editor of the famous "Biblia Polyglotta." The window is in the Renaissance style. At

its base is a Latin inscription, as follows:—"In D.O.M. gloriam et in recordationem Thomæ Fuller Sacræ Theologiæ Professoris qui Anglorum laude dignorum vitas depinxit Ecclesiæ Britannicæ annales composuit. Joannis Pearson Episcopi Cestriensis qui Fidem Catholicam interpretatione luculenta explicuit. Briani Walton Episcopi Cestrienses qui compluribus linguis divinas scripturas edidit. Discrimina denorum idem spiritus (1 Cor. xii. 4)."

Harrogate.—A memorial window has been placed in the baptistery in the west end of Christ Church, High Harrogate, to the memory of the late Canon James, formerly vicar of that church. The subject is the Baptism of Christ by St. John in the Jordan. The window was designed and executed by Messrs. Shrigley & Hunt, Lancaster.

SCHOOL BOARD SCHOOLS.

Chalgrove (*Oxon*). — There has just been opened at Chalgrove a new school, providing accommodation for 114 children and a residence for the master. The works have been executed by Messrs. Howland & Wells, of Thame, who took the contract for building and furnishing at 1,208*l.*, but there have been no extras, and after deducting a portion of certain provisions included in the contract, the actual cost is found to be 1,185*l.* 14*s.* 7*d.* The architects are Messrs. Morris & Stallwood, of Reading.

Forest of Dean.—The first two schools erected by the Forest of Dean School Board have been formally opened. They are situate at Bilson and Pillowell. The Bilson school buildings form three sides of a quadrangle; the open side is to the south, and admits the sun into the infants' playground. Accommodation is afforded for 158 boys, 107 girls, and 168 infants, making a total of 433 children. Each boys' and girls' school-room and class-room is 18 ft. wide, whilst the infants' school-room is 20 ft. wide, giving a superficial area of 10 ft. of floor space for each child. All the rooms are 12 ft. high to the wall-plate, and open to the roofs. The rooms are warmed by open fireplaces, in which are fitted Whitwell's patent "Save-all-waste" fire-grates. The lavatories are supplied with Macfarlane's patent iron basins, in solid stands. The teachers' residences are of a superior character. One contains entrance-hall, staircase, two parlours, kitchen, scullery, pantry, the requisite out-offices, and four bedrooms; the other has one parlour and three bedrooms; the whole spacious in size, and supplied with every modern appliance. The buildings are constructed of stone, lined with bricks; the roofs are open-boarded, felted, and slated; the walls up to the window-cill level cemented all round. The infants' schoolroom is fitted with galleries, whilst the adult children are provided with the Vaga patent reversible desks and seats, and every requisite appliance, manufactured by Mr. J. Lewis, of Ross. The amounts of the contracts are as follow:—For schools, 2,864*l.*; houses, 1,076*l.*; boundaries and formation of site, 940*l.*; total, 4,880*l.*——The Pillowell School buildings, Whitecroft, near Lydney, are similarly arranged in plan and construction, but rather more detached and reversed to the plans of those of the Bilson School buildings, in order to suit the aspect of the site, the residences being placed on the left-hand corner instead of in the centre, the accommodation here being for 125 boys, 108 girls, and 167 infants, making a total of 400 children. The amounts of the contracts for these are as follow, viz.:—For schools, 2,857*l.*; houses, 1,086*l.*; boundaries and formation of site, &c., 730*l.*; total, 4,673*l.* When the cost of the houses is deducted from the total expenditure, as well as the formation of the sites, boundaries, &c., which in both these cases is necessarily somewhat expensive, owing to their position and peculiarities, the cost of the schools proper is only 7*l.* per head. Both of the contracts, amounting to a sum total of nearly 10,000*l.*, were commenced in September, 1876, and completed in every particular in rather over a year. The clerk of works for the Bilson School was Mr. H. Roberts, of Cinderford; and for the Pillowell School, Mr. W. Nicholson, of Whitecroft; the builder of both being Mr. William Bowers, of Hereford. The architects are Messrs. Haddon Brothers, of Hereford, whose plans were selected in competition.

Whitstable (*Kent*).—New Board schools have recently been opened at Whitstable, Kent, which have been erected for the United District of Whitstable and Seasalter. The boys' department has school and class room, and accommodates 110. The girls' department has school and two class rooms, giving accommodation for 170; and the infants' department has a large school-room, a seniors' class-room, and babies' room, accommodating 200 altogether. To each of these departments are attached a spacious cloak-lobby, with lavatories, and also extensive playgrounds; and the infants have a covered marching-shed, 160 ft. long. There are two residences for master and mistress, each containing six rooms, together with larder, fuel shed and usual offices. The heating of school and class rooms is by means of Messrs. Shillito & Shorland's (Manchester) grates; and the ventilation of these rooms has been provided for by upright shafts for the admission of fresh air, and extracting shafts, with small roof gablets, for taking off vitiated air. The erection and furnishing of the buildings has been carried out by Mr. Foad, contractor, of Whitstable, at a cost of about 4,900*l.* Mr. Jarvis, of Huntingdon, acted as clerk of works. The architects were Messrs. Morris & Stallwood, of Reading.

ODD COINCIDENCE.

ON Saturday night, or early on Sunday morning, the premises of Mr. Samuel Morgan, builder and decorator, of Royal-road, Croydon, were entered by thieves, and property valued at 150*l.* was carried away from the building. This is the third occurrence of the sort of which we have received notice within a week, and in each case, we are further informed that the books were all saved through being in a certain maker's Safe,—the same maker in all the instances. We are too polite to suppose that the agents of this particular Safe man have had anything to do with these occurrences, but the coincidence is certainly striking. It will scarcely be believed, but since writing the above we have been asked to mention that the premises belonging to Messrs. Thomas Young & Co., of Catherine-street, Northend, Epsom, suffered severely from fire last Sunday morning. It originated in the workshops,—a large timber building of three floors; and again, it is stated, the books and money were preserved by one of the same maker's safes.

Miscellanea.

The Reredos at St. Ethelburga's.—Dr. Tristram, the Chancellor of the Diocese of London, has given judgment in the case of "The Rev. J. M. Rodwell *v.* The Churchwardens of St. Ethelburga," in which an application had been made by the rector for a confirmatory faculty to be granted for a reredos which had been placed in the church, and also to direct the restoration of the Communion-table, which had been removed some time back by the churchwardens. The Chancellor, in giving judgment, described the several compartments of the reredos containing representations of the life of our Lord on earth, to which were added two wings to preserve the reredos from dust, the work being carved. The churchwardens had taken some exception to the reredos, and he (Dr. Tristram) had visited the church, and did not think that the plan filed accurately described the reredos. There were thirty figures in the compartments representing the several scenes he had mentioned. On inspection after he had the plan, he found that the reredos was placed at the east end of the church, at the back of the altar, and was an ornament such as was used in Roman Catholic churches on the Continent. He was anxious that the Lord Bishop should visit the church, and his lordship had done so, and had made a report that it was not a proper ornament to be allowed. He (Dr. Tristram) had in the exercise of the discretion vested in him, thought it would be a wise exercise of the same to refuse the application for a faculty to allow the reredos to remain in the church, and it must, therefore, be removed.

Large Saws.—Mr. Adolphe Arbenz writes,—"Referring to my last letter, I beg now respectfuly to inform you that I have received to-day an order from the United States for a considerable number of large saws, each of them measuring 60 ft. in length, by 4 in. and 6 in. in width, and 16 to 18 w.g. thick. Every one of these saws will be manufactured of one piece of steel, and guaranteed to be of the same temper all through."

Growth of Opinion on the Health Question.—It is satisfactory to those who have worked for years in asserting the vital importance of this question to find this now everywhere admitted. The *Times* writes,—"The improved health which is the result of improved sanitation points to the existence of better and more comfortable homes, and these in their turn point to a general improvement of the state of the wage-earning classes, especially in great towns, and thus strike at the roots of much of the vice and misery which all philanthropists agree to deplore, although too many trace them no further than to some immediate cause, such as intemperance, which in itself is largely an effect of causes that lie still deeper. Life, money, the vigour of the people, the decency and the comforts of home, and all that constitutes the difference between respectability and brutality, are included, in greater or less degree, in matters which have at first so little apparent connexion with them as the cleansing of streets and the disposal of sewage." It is interesting to inquire how it happens that, among a practical people like ourselves, the waste of money and of life indicated by our present mortality has so long been suffered to prevail. The *Times* thinks it is probable that the inefficient character of much of our sanitary legislation, and also the way in which legislation calculated to be efficient has been weakened or nullified by the executive, have been due to the deficiency in the House of Commons of members at once possessing the ear of the House and of the public, and capable of speaking upon health questions with full authority and knowledge. Almost every other great national interest is fully represented in Parliament, but the interests of public health are at best only represented by imperfectly skilled amateurs.

Worcester Diocesan Architectural Society.—The annual meeting of this society was held at Worcester on the29th ult. Mr. G. J. A. Walker in the chair. The report of the committee deplored the loss of several members. Six members had joined since last meeting, and the committee urged upon the members to give the society more strength by getting fresh members to join. They also proposed that some of the funds of the society should be expended in having drawings and paintings of old buildings and houses in Worcester and its immediate neighbourhood that were purchased for the purpose of improvement. A detailed account was given by the committee of the two excursions made by the society during the year: the first, in June, to Hales Owen and the neighbourhood; and the second, in August, to Tewkesbury Abbey, Deerhurst Church, and The Rhydd; as also the different churches built and restored in the diocese during the last twelve months. The report was unanimously adopted. Mr. Noake brought forward the subject of enlarging the basis of the society by admitting as members those outside the Church of England, and, after some discussion, the secretary was instructed to call a special meeting of the members together to consider the subject.

Steam Power for Street Tramways.—Some interesting trials with the view of adopting steam as a tractive power for tramways in Leeds, took place on the 28th ult., on the Headingley line, on which occur the steepest gradients on the local lines. A short time ago the same engine, which has been manufactured by Messrs. Kitson & Co., Airedale Foundry, was set to draw along that line one of the large American cars, which alone weighs nearly three tons, and there were in it between fifteen and twenty passengers. The only drawback then was that some of the water found its way into the ash-pan, and so generated an issue of steam. The engine (which is an upright one of 12-horse power nominal) was accordingly taken back to the foundry to have this defect remedied. Having been put right, it was on the date named used experimentally, and is reported by the *Leeds Mercury* to have done its work remarkably well. The car which it drew is one of the smaller ones, weighing about two tons; but in most of the journeys made it contained the full complement of thirty-four passengers. Although kept much within its capacity for speed, the steam car travelled quicker than those drawn by horses; and the engine neither emitted smoke nor steam to any appreciable extent, passengers being able to travel on the outside of the car without annoyance. It was also, as nearly as possible, noiseless. Nevertheless, it is reported to have scared several horses.

Bells for St. Paul's. — Several of the companies of the City will each defray the cost of a bell, to bear the arms and motto of the company by which it is presented. The first and second bells are given by the Drapers' Company, impressed with the triple crown and the motto, "Unto God only be honour and glory"; the third, fourth, fifth, and sixth bells by the Baroness Burdett-Coutts and the Turners' Company, with the Turners' motto, surmounted by a coronet, under which the words, "By faith I abteigne"; the seventh bell by the Salters' Company, arms—three salt-cellars, motto, "Sal sapit omnia"; eighth, the Merchant Taylors' Company, motto, "Concordia parvæ res crescunt"; ninth, Fishmongers' Company, "All worship to God only"; tenth, Clothworkers' Company, "My trust is in God alone"; eleventh, the Grocers', with the motto, "God, grant grace"; and twelfth, and most important, the tenor-bell, which weighs 60 cwt., the gift of the Corporation, bearing the City arms and the motto, "Domine, Dirige Nos." The weight of the whole peal will be 11 tons. On each bell as well will be impressed the arms of the Dean and Chapter, surmounted by the letter "D," each and every impression being enclosed in a shield-like framing, the design of the cathedral architect, Mr. F. C. Penrose, under whose direction also has been constructed the cage in which the bells will be enclosed, the construction of which alone will require an outlay of 1,000*l.* The bells, which will cost about 5,000*l.*, are being cast at the foundry of Messrs. Taylor, Loughborough, and are to be finished in about six months. So says the *City Press*, which seems to regard it as a grievance "that the commission for the bells should have been given to a firm in Leicestershire, when there are bell-founders of great repute in the City and metropolitan district."

The Drainage of Hailsham.—On the 27th ult., Mr. Harrison, C.E., one of the Inspectors of the Local Government Board, held an inquiry at the Board-room of the Hailsham Workhouse for the purpose of ascertaining the necessity for the borrowing of a sum of 6,000*l.* for the purpose of constructing a system of drainage for the town of Hailsham. The first inquiry, when the question was originally brought under the notice of the Local Government Board, was held some three years since, and the Inspector then advised that the necessary work should be carried out. In the meantime, the subject has been before the Sanitary Authority, the various Boards of Guardians for the Union which have been elected since that date, and at length a system designed by Mr. G. A. Wallis, of Eastbourne, has been adopted. This, it was explained, would entail an expenditure of some 6,000*l.*, of which sum 4,000*l.* would be for the drainage proper, with irrigation, and the remaining 2,000*l.* for a supply of pipes to be connected with the main laid from Polegate and connected with the Eastbourne Waterworks, and other necessaries for the reception of water for flushing. The Inspector expressed an opinion that the cost of this latter work was somewhat high, and regretted that Mr. Wallis had not been requested to meet him there. He also commented on the charge of 150*l.*, to be paid in perpetuity to the Eastbourne Waterworks Company, as interest on the outlay involved in carrying the water from Polegate to Hailsham, and said that 1s. per thousand gallons for the water was also high. There was no opposition to the loan being applied for, nor to the works proposed to be carried out, and the Inspector stated he would forward his report as soon as possible after he had met Mr. Wallis.

Queen Margaret's Cave.—The *Edinburgh Daily Review* reports the intended restoration of a hitherto neglected relic at Dunfermline, dating from the time when King Malcolm held court at the Tower-hill. This relic is Queen Margaret's Cave, which consists of an apartment in the solid rock, and is situated a few hundred yards from the Tower-hill. It is 6 ft. 9 in. in height, 8 ft. 6 in. in width, and 11 ft. 9 in. in length. At the bottom of the cave is a small spring well, the water of which rises at times, and covers the whole of the lower space. Queen Margaret was accustomed, historians tell us, to repair constantly to the cave for the purpose of private devotion, and the king, discovering the real cause of her long absences, hearing while he listened prayers uttered by her on his behalf, caused the rude excavation in the rock, always damp and dingy, to be fitted up as an oratory. After the queen's death the place was permitted to fall into decay.

An Historical Church.—The Rev. D. Owen Davis, of Pontnewynydd Vicarage, Pontypool, writes:—"The parish from which I write claims the somewhat unenviable distinction of being one of the centres of the Chartist rising in 1838, in which Frost, Williams, and Jones took so prominent a part. After the rebellion had been firmly quelled a few gentlemen in the neighbourhood, amongst whom was Mr. Thomas Phillips, afterwards knighted for his gallant conduct at Newport, determined, as one means of instructing the populace in the duties of good citizenship, to erect a church in the district. The work was pushed forward at once, and the church of St. Luke, Pontnewynydd, was built, and consecrated by good Bishop Coplestone, of Llandaff. About four years ago, under a former incumbent, the hastily-erected structure was found to be greatly dilapidated, and it was taken down. An effort, which, unfortunately, proved unsuccessful, was made to rebuild it; the funds were exhausted when the walls were but a few feet from the ground. In this condition it remains, and is likely long to remain, for, owing probably to the hurried nature of the original undertaking, the site of the church was neither enfranchised nor transferred to the Ecclesiastical Commissioners, the building being merely vested in private trustees, of whom Sir Thomas Phillips was one; and thus it would seem that no one is now legally responsible for its restoration. Is it not a pity that for want of some 400*l.* this historical church should be left in ruins?"

Alleged Trade Union Intimidation.—At the Sheffield Quarter Sessions an application was made for the postponement of the trial of Robert Holmshaw, a trade-union secretary, for having intimidated a grinder named Hibbert. The defendant was committed for trial at the last Quarter Sessions, but two days before they commenced it was ascertained that Hibbert had been sent to America, his passage being paid, and money given to his wife to follow him with her child. The case was adjourned last session that the Treasury might be asked to assist in bringing Hibbert back, but they declined to interfere. Under these circumstances it was the intention of the prosecution to have gone on with the case in the absence of Hibbert, but a few days ago it was discovered that the most important witness left,—a man who heard the defendant threaten Hibbert that if he did not discharge an apprentice he would be "smashed,"—had also disappeared. The counsel for the prosecution stated that there was a strong case in point of law against the defendant, but a weak case in point of fact. He therefore applied that the indictment might be placed upon the file until the further orders of the Court. The application was granted.

New Public Hall, Grantown, N.B.—The new public hall at Grantown was opened on the 27th ult. The building covers 64 ft. by 40 ft. Facing southwards, the front elevation is built of dressed granite and freestone, and is broken up by numerous windows and doors. In the centre there is a break for a tablet of freestone, on which is inscribed the year 1877. The ground-floor of the building is occupied by two shops, with store accommodation behind, the upper part being the hall proper. The principal entrance is in the centre of the front, and a corridor, 8 ft. wide, leads to the staircase. The hall, which is provided with retiring-rooms, will be seated to accommodate 400. The architects were Messrs. Matthews & Mackenzie, of Aberdeen and Elgin; and the tradesmen were — for mason work, Messrs. John Grant & Son; carpenter, Messrs. D. Mackintosh & Son, Drummuillie; slater, Mr. James Winchester, Grantown; plasterer, Mr. Wm. Duffus, Grantown; painter, Bailie Tulloch, Inverness; plumber, Messrs. Hunter & Wink, Nairn. The cost has been about 1,500*l.*

The Late Sir Digby Wyatt. — A monument has just been erected in Usk Churchyard to the memory of the late Sir Digby Wyatt, by his brother, Mr. Thomas Henry Wyatt. It consists of a red Aberdeen granite ledger with chamfered edges, on which is the following inscription:—"Here rest the remains of Sir Matthew Digby Wyatt, Kt., born 28th July, 1820. Died 21st May, 1877. 'We asked life of Thee and Thou gavest him a long life, even for ever and ever.'—Ps. xxi. 4." On the top of the ledger is placed a Sicilian marble recumbent cross, the base of the monument being of grey Rubislaw granite, surrounded with a wrought-iron railing, on a Forest of Dean stone curb. The work has been executed by Messrs. Burke & Co., of Newman-street, Oxford-street.

Geological Time.—At the last meeting of the Royal Society, the Rev. Samuel Haughton read a paper on a new method of finding limits to the duration of certain geological periods. He had previously shown how he came to the conclusion that the elevation of Asia and Europe displaced the axis of *maximum inertia* through sixty-nine miles. The axis of rotation being thus separated from the axis of figure by sixty-nine miles, or one degree, began to revolve round it. But for friction, this would continue for ever, and the object of the paper was to discuss how long would be required for friction to bring the axis of rotation to again coincide with the axis of figure. The friction is that of the ocean, which always tends to revolve round yesterday's axis until compelled to revolve round to-day's axis by friction against its bed. The calculations brought out the result that 641,000 years would be required to restore the coincidence of the axes, and therefore, the formation of Asia and Europe cannot be more recent. Further calculations gave the minor assignable limit to geological time as eleven million years in round numbers.

The Late Mr. Burridge, Builder.—We regret to announce the death of Mr. Herbert Burridge, senior partner of the firm of Messrs. H. & F. Burridge, extensive builders at Exmouth, Devon. He died suddenly, a few days ago, of apoplexy, whilst yet under fifty years of age. Mr. Burridge was well known throughout the West of England. A greater part of the best portion of Exmouth, erected within recent times, owes its existence to the enterprise of this firm, or to their father before them. Amongst other works in which Mr. Burridge was engaged may be mentioned the building of the church at Withycombe, from the designs of Mr. E. Ashworth; extensive additions to Lord Poltimore's, at Poltimore, and to Sir Greville Smythe's, at Ashton Court, near Bristol, both under Mr. B. Ferrey, F.S.A.; the new church at Otterton, and the restored one at Up-Ottery, under the same architect; extensive additions to Lord Sidmouth's mansion, near Honiton; the New Board Schools at Exmouth, just completed; the important Coast Guard Station Depôt at Budleigh Salterton; and many churches, mansions, and other public buildings in the West.

Working Women's Hotel, New York.—The "Working Women's Hotel," at New York, founded by the late Alexander T. Stewart, is almost completed, and will soon be opened. It has cost about $2,000,000 to build and furnish it, and that amount is given absolutely to the enterprise; but thus started, it is to be self-supporting. There are upwards of 500 private rooms in the hotel, some double-rooms of 30 ft. by 16 ft., which two women may take, and other single rooms of half that size. A number of reception-rooms are provided, in which the residents may entertain their friends. The library is to be fully supplied with newspapers and periodical publications, and there are already 2,500 books upon the shelves. The main dining-room will seat 600 persons at a time. The house is intended to give to women who earn their own livelihood the best rooms, best furniture, best attendance, and best living, at a charge for the whole not exceeding $5 per week. A large room is to be used for supplying meals, or selected articles of food, at the lowest possible price to women who cannot be accommodated with lodging in the house.

Bubbenhall, Warwickshire. — A new reredos has been put up in this church, the gift of the Rev. A. N. Fanshaw, upon the occasion of his resignation of the living and the appointment in his place of the Rev. E. H. Harrison. It consists of a large moulded and cusped canopy, resting on carved capitals and marble columns, under which is sculptured the subject of the "Last Supper" in very bold relief. The background being well recessed, the shadows bring out the figures clearly. Mr. W. Jeffrey Hopkins, of Worcester, was the architect, and Mr. Boulton, of Cheltenham, the sculptor.

Death of a Steeple Jack.—William Dunbar, aged twenty-six, belonging to Dundee, met with a fearful death at Inverness. He was engaged repairing the steeple of the Free High Church in that town, when, either through the coldness of the weather, or through becoming giddy, he lost his hold and fell from a height of about 70 ft. He alighted on an iron railing, on which he was impaled. His death was instantaneous.

Accident at Lower Norwood.—On the 7th, a frightful accident, which it is expected will cause the death of one or two men, occurred at the new buildings being erected for the London and South-Western Bank, Lower Norwood. It appears that the structure has been carried to a height of about 30 ft., with a scaffold erected in front. At the time mentioned, ten men, principally bricklayers, labourers, and masons, had all congregated together on the top scaffold, where they thought they would be out of observation, for a conference as to some extra demand, it is alleged, of another ½d. per hour. While the discussion was going on, the architect and the contractor arrived, and were about to proceed up the ladder. Another labourer went up first with a load of bricks, and, it is believed, gave warning to the conference. He had no sooner put his foot upon the top scaffold than the whole came down together, precipitating all of them to the ground. A number of the men are dreadfully injured.

An English Colony in Russia.—The Russian journal *Zacht* publishes a letter which reveals the existence, near Archangel, of a small English colony, hitherto perfectly independent. This colony, which has been gradually formed by emigrants attracted by the establishment of some important sawmills by an English company, very soon formed a town, the existence of which has, so to speak, been so far ignored, and which has figured neither upon maps, on the cadastral register, nor on the tax-lists. The consequence is that the inhabitants, the number of whom is not stated in the journal, pay no kind of tax, and have remained up to the present independent of the local authorities.

Inventors' Exhibition.—An exhibition of a somewhat novel kind has been opened in the Palais de l'Industrie, Paris, the contributions being strictly confined to new inventions. According to the *Journal of Trade Marks*, it is proposed to hold the exhibition annually, and the opinion prevails that it will turn out a great success,—not in a popular sense, but commercially. There is certainly a good idea in bringing together all new inventions, or, at least, as many as possible. To many persons such a collection will be infinitely more satisfactory than a book on the subject, although an illustrated catalogue would furnish a valuable record of the practical science of the year.

Chiddy Memorial Cottage, Hanham, near Bristol.—The presentation of this cottage was made on the 8th inst. to the widow and family of the late John Chiddy, who was killed by an express train on the Great Western Railway whilst removing a stone from off the metals. The cottage is built of native Pennant stone, and is roofed with plain Bridgewater tiles, the cost being 267*l*. Half an acre of land was given with the cottage. The fund was raised by subscriptions from all parts of England. The architects are Messrs. J. W. Trew & Sons, Bristol.

The National Gallery.—There are of course several candidates for the vacant office of Keeper. Gossip says the chance lies between Mr. Holmes, the Queen's Librarian at Windsor, and Mr. Comyns Carr, the former for choice. There is a third gentleman, however, who does not wish his name mentioned, but is quietly forging a-head.

TENDERS

For rebuilding two warehouses in Bread-street. Messrs. Ford & Hesketh, architects:—

Kirk & Randall	£7,980	0	0
Morter	7,518	0	0
Nightingale	7,428	0	0
Shaw	7,356	0	0
Browne & Robinson	7,340	0	0
Arrowsmith	7,332	5	0
Mark	7,118	0	0
Scrivener & White	6,972	0	0
Ashby Bros.	6,944	0	0
Newman & Mann	6,850	0	0
Brass	6,676	0	0
Crabb	6,371	0	0

For building three houses on the north side of Honor Oak-road, Forest-hill, for Messrs. M'Call. Mr. J. P. Waterson, architect:—

Martin	£3,187	0	0!
Linfield	2,804	0	0
Parker & Evans	2,700	0	0
Bantrik & List	2,625	0	0
Taylor	2,481	0	0
Longman	1,500	0	0!

For a block of model residences, Islington, for the Sanitary Dwellings Company, Limited. Mr. Banister Fletcher, architect:—

Bays Bros. & Allen (accepted)	£4,344	3	0

For alterations to house and shop, Finsbury-place, for Mr. George Powell. Mr. Banister Fletcher, architect:—

Deards	£1,317	0	0
Tayler	1,250	0	0
Bayes Bros. & Allen (accepted)	1,070	0	0

For the erection of a block of dwellings on the flat system, at Parkdale-road, Plumstead Park Estate. Mr. W. S. Witherington, architect:—

Combes (accepted)	£1,500	0	0

For rebuilding No. 10, Sun-court, and 46, Curzon-street, Mayfair, for Messrs. Wyld. Mr. Joseph S. Moye, architect. Quantities by Mr. A. F. Wrightson:—

Adamson & Sons	£2,851	0	0
Cairns	2,543	0	0
Curtis	2,479	0	0

For the erection of four shops at Enfield, for Mr. G. S. Grimmond. Mr. Joseph S. Moye, architect:—

Pratt & Wiseman	£2,749	0	0
L. & W. D. Patman	2,597	0	0
Fairhead	2,393	0	0
Grover	2,369	0	0

For two detached residences, Manor Park Streatham. Mr. F. C. Notley, architect:—

Buckland (accepted)	£3,385	0	0

For three villa residences at Wandsworth-common. Mr. F. C. Notley, architect:—

Hayworth (accepted)	£4,525	0	0

For house to be erected at Woodford. Mr. S. Saunders, architect:—

List (accepted)	£470	0	0

For repairs and decorations to Murree House, Dulwich, for the executors of the late Mr. J. Vance, M.P. Mr. W. Scott Champion, architect:—

Colls & Sons	£282	0	0
Collett	200	15	0
Allen	148	0	0
Johnson & Co. (accepted)	137	5	0

For house and stables for Mr. M. Essex, at Leigh, near Worcester. Quantities supplied. Mr. W. Oakley, architect:—

Kimberley	£3,394	0	0
Stephens & Bastow	3,049	0	0
Kendrick	3,009	0	0
Wood & Son	2,987	0	0
Dixon	2,961	0	0

TO CORRESPONDENTS.

E. S.—E. W.—R. S.—S. H.—P.—W. K. K.—B. F.—F. C. N.—W. T.—Mr. F.—Observer.—W. S.—H. S.—B. & C.—H. A. H.—C. M.—A. R. & Co.—C.—C. G.—S. M.—W. G. T.—One connected with the Building Trades.—An Old Mason.—A Sufferer.—E. G.—Messrs. E.—R. H. R. (already in our columns).

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